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THE
LONDON QUARTERLY REVIEW.

JANUARY, 1867.

- ART. I.—1. *L'Immortalité selon le Christ, Etude Historique.*
PAR CHARLES LAMBERT. Michel Lévy. 1865.
2. *L'Exégèse Biblique et l'Esprit Français.* PAR ERNEST
RENAN. *Revue des Deux Mondes*, 1st November, 1865.
3. *Méditations sur L'Etat actuel de la Religion Chrétienne.*
PAR M. GUIZOT. Michel Lévy. 1866.
4. *L'Eau Bénite au XIX^e Siècle.* PAR MGR. GAUME, Proto-
notaire Apostolique. Gaume et Duprey, Rue Cassette.
1866.

It is not without reason that the orthodox French Protestants are striving to draw the bond of union closer. They have not only to resist the pernicious influence of men like M. Paschoud and the Coquerels, *père et fils*, but also to make a stand against the flood of "Essays and Reviews" literature which is now forcing its way into their country. The old French infidelity was of a thoroughly different type from our own. The sneer, solemn or lively, was their weapon of offence in sapping the already rotten foundations of the old creed. M. Lambert and his party, the advanced Renanites, adopt a different plan. They march on with *apparatus criticus* and battering train of Hebrew quotations, with blowing of German war trumpets, and all the pomp and circumstance with which Dr. Colenso has made us familiar in his attack on the Pentateuch. Not that they object to a sneer; they will even, like the bishop, go a little out of their way for a telling one; but they do not trust mainly to sneering; they rather use it as a martinet general in India might use the occasional services of his irre-

gular horse. They are earnest (forsooth), well-meaning, anxious to free the truth from human incrustations, doing a work which they take care to inform us they are sure Moses himself would thank them for if he were here. M. Lambert is no Voltaire; he has inflicted on the world a *Système du Monde Moral*, and threatens us with a treatise on *Théodicée Naturelle* (as he calls it), and another on education. He winds up his work with a sentence which shows that he has adopted Mr. Maurice's definition of eternal life, or something very near it:—"Rien ne nous sert pour la vie éternelle que l'être nouveau que nous créons en nous: tout homme qui hait son frère n'a pas la vie éternelle résidant en lui." To the young enthusiast, as well as to the thoughtful, to those who are weary of trying to "read the riddle of the painful earth," and who (in their vain struggles after that full insight to which man can never attain here below) would fain be wiser than what is written, such a man is a hundredfold more dangerous than a scoffer. We have passed out of the age when "a little fiend who mocked incessantly" could do much harm to educated people. Carlyle, Maurice, and Coleridge, Maurice's master, have prepared men's minds to take pleasure in great swelling words, no longer uttered directly against the Most High, but actually pretending to do Him service by pulling in pieces the word wherein is contained His revelation of Himself. M. Renan's paper, which we have set side by side with M. Lambert's book, is only the preface to a forthcoming work, a translation of the Dutchman Kuenen's *Recherches Historiques et Critiques sur l'Ancien Testament*, which, Englished as it has lately been, any one may compare for himself with the similar works of our native sceptics. It is sadly significant that in the *Revue des Deux Mondes*, the French *Quarterly* and *Blackwood* rolled into one, the periodical which set the example to our own *Fortnightly*, papers by such men as Renan and Reville should appear almost every month, among amusing incidents of travel and instalments of sensation novels. M. Renan, in the paper before us, is duly grateful to the Teutonic spirit of criticism. He praises the Germans, just as Strauss, in the "new popular edition" of his *Leben Jesu*, praises him. He confesses that the French could never have got on without help: "They are so fond of putting talent in the place of scholarship. This was Bossuet's weak point. . . . Intellectual mediocrity and idleness in research have always stamped the Gallican Church. . . . France led the way, as it does in most things; but her scholars soon became narrow and superficial, and 'society' quickly invaded the realm of science." Curiously enough,

says M. Renan, the enlightened men among the Protestants were well received by the Catholics, and *vice versâ*. Cappel, for instance, who, with Bochart, is among the earliest of biblical critics—he first compared alphabets and fixed the vowel points—was a Protestant. The Romanists read and liked him; but his own people called him “*Atheismi buccina, Alcorani fulcimentum, publicâ flammâ abolendum.*” But M. Renan’s favourite is Richard Simon, a Dieppe oratorian, who published in 1678 his *Histoire Critique de l’Ancien Testament*, in which “he anticipated the German method,” and that retouching of the text which sets the Bible before us as a *corps organique* growing by certain laws, and relieves us from the necessity of accepting or rejecting any single book as a whole. This “wholesome rivalry between Protestant and Catholic critics” was arrested by the revocation of the Edict of Nantes, and the French school was thenceforth condemned to sterile trifling. Calmet was a pompous fool, as uncritical as his pupil Voltaire; he arrested the Benedictines by sneering away all their readers. Polemics and true criticism cannot go together. The object in polemics is to gain an easy victory; and “on ne fait pas de bonne science avec cela.” The Abbé Guénée was as bad a critic as Calmet; “he was formed on the mean and petty school of English apologists.” He deals in none of those grand shadowy German mysteries in which M. Renan delights—“vital questions he never thinks of, though he goes to a Paris foundry to test practically the making of a golden calf.” Fourmont might have done better; but Louis XV. and Cardinal de Noailles stopped him altogether. Even Calmet had to be defended against the Inquisition. Indeed, there was no freedom in France, save for libertine writing: free thought took refuge in Holland. Astruc, the doctor of Montpellier, who, in 1753, published his *Conjectures on the Original Documents used by Moses*, noting in an uncritical way the patchwork state of the Pentateuch, was the only French writer on biblical exegesis till almost yesterday. True, Barthélemi found out the Phœnician alphabet; but, in 1800, Sylvestre de Sacy was, probably, the only Hebraist in France; and the feeble school-boy style of the early papers of the Institute is something startling. Such is M. Renan’s brief sketch of the early age of French criticism. Persecution did not make Frenchmen Christians; but it made them bad scholars. Bossuet, by persecuting Richard Simon, prepared the way for Voltaire. He rejected, on behalf of his country, free science and grave inquiry, and he received instead buffoonery and shallow infidelity. Of course, in this M. Renan finds a

lesson for us : on our treatment of the critical spirit which is abroad in the world will depend the religious state of our grandchildren. But let us turn from the French Bible criticism of the past century to that of to-day. No one can complain of M. Lambert's "shallowness;" he is constantly telling us of the distinction between *ψυχή* and *πνεῦμα*, between Enosch (עֲנוֹשׁ) and Adam (אָדָם). He is not satisfied to speak of "the Law," he must call it "the Torah." He is outspoken enough to please M. Renan himself. At the very outset of his book he compares David to Louis XI., Jonathan answering to the son of his rival, the Duke of Burgundy; and, when he comes to the death of our Lord, he speaks of the "painful effect," the sense of desolate disappointment which the four accounts, one after another, have upon our minds. His object is to show that the immortality, dreamed of for himself and his select friends by David, promised by Christ to all who should continue faithful through "the times of repentance," preached by St. Paul as the reward of "faith," was no future state of uncertain glory, but an eternal life of the body here on this earth. David believed that this was to be his reward. As the infirmities of a premature old age came on, he hoped against hope, and poured forth his longings after "the path of life with pleasures without end" in psalm after psalm.

M. Lambert interprets the Psalms in a way which seems to us most forced, as well as most irreverent. The second psalm, for instance, is, he says, a "veritable edict of Jehovah, published by David, enjoining all to believe that David had become by right of sonship heir of the kingdom." To this the eighteenth psalm, and the chapter of 2 Samuel in which it is reproduced, form a prelude. And if this strange assumption of divinity is not recorded in the prose history, it is because the Jews had a way of leaving out of their historical books everything which was belied by actual fact. David is assured that he shall be immortal: "He is renewing his strength as an eagle's:" he has a grand celebration of his acceptance as son and heir of Jehovah; but the histories are silent about this, for David died like other mortals. It is only in those Psalms which were capable of a secondary or spiritual interpretation, that the record is preserved of what M. Lambert, from his point of view, may well call "the most remarkable form which human pride has ever taken—the claim to be the son of a God whose distinguishing attribute was unity." We hardly recognise the Psalms after M. Lambert's naturalistic hand. Every phrase is, with ruth-

less hardness, severed from its traditional interpretation. This is seen most strikingly in our author's comment upon the 110th Psalm, "Jehovah said unto my lord (David)." And again in verse 5, "O Jehovah, our Lord (David), on thy right hand, breaks the kings in his wrath." In the second of these cases, the word Lord still has the *Kodesch*, which mark is only used with words applied to a Divine personage. יהוה must mean the Almighty: the יהוה of the first verse originally had the same sacred points; but when the punctuation was fixed, David had long been dead. Thus it was that the *Wip* (*Kodesch*) was only preserved for that "Lord," which, by a dexterous legerdemain, might be applied to God. David meant by the whole psalm a record of his apotheosis. In this way M. Lambert, on the Psalms and the books of Samuel, anticipates those who in this country mean to carry on the Colenso plan through the Bible. But against David himself, he writes with a feeling of personal bitterness. All that we are accustomed to consider noble traits in his character, are so told—so strangely distorted in the telling—that they become proofs of a certain cold, calculating spirit which our author attributes to the man after God's own heart. The news of Saul's death, of the murder of Ishbosheth, and such like "lucky mishaps," David always arranges to have brought to him by strangers who have no relations to inquire into and avenge their deaths. Thus he is able to show his righteous indignation and to free himself from the risk of exposure, by slaying the messengers before they can say a word about his share in the transactions. The numbering of the people, again, is a plan for raising a poll-tax. David, who had read a good deal in the one copy of the law which was then in existence, and who took care (says M. Lambert) to build up this precious document into the wall of some outbuilding of the temple—where in fact it was found in Josiah's reign—lest the difference between Mosaism and Davidism might be seen in all its vividness, wishes to number the people because of the half-shekel per head ordered in Exodus. The people murmured, because, willing as they were to admit his title of heir and son of Jehovah, they did not think that title any reason for letting him appropriate the half-shekel. Then comes the plague; and David in alarm thinks seriously of doing what he always before thought would ruin his power—of building a temple to Jehovah. After all, though God by the mouth of Nathan had promised "to make David an house," abdicating His own earthly rights in favour

of "His son," perhaps He might be pleased with a place in Jerusalem to set His name there, and it might exist without detriment to David's authority, since only the name and not the Being would be worshipped in it. Hence comes a division of power, a sort of double Japanese government, sketched out in 1 Chron. xxii. and the seven following chapters. But scarcely are these new plans settled, when David's increasing infirmities force him to admit Solomon to a share of the government. Still he goes on hoping against hope for that endless life here on earth, to which he had believed that he, the new man, had attained. His Psalms are full of hopes and fears about his health. He speaks like a man who has discovered the *fontaine de jouvence*, but he has no idea of a resurrection. That idea grew up in the Jewish mind from the belief that "all God's promises in the Psalms" were absolutely true. Some of them, therefore, unfulfilled in David's case, were passed on to be fulfilled for the Messiah: others, it was believed, were to be fulfilled for David himself sometime or other. This, our author says, is the earliest phase of "the resurrection idea," a very different thing from David's notion of immortality. Of David's character our author's estimate is what we might expect from the instances given. If he is bitter against Absalom, it is because Absalom practised on him the tricks whereby he himself had won popularity. The old king's sorrow for his slain son is a solemn farce. But M. Lambert's wrath is fiercest when he discusses the matter of the Gibeonites; "of all David's bloodthirsty devices this is the most atrocious and the most cleverly planned." As for the matter of Bathsheba, we are all wrong in applying to it the *penitential Psalms*. De Wette has demonstrated that the title of Psalm li. does not belong to it. Everything turned out just as David wished: the child died, and so his crime was expiated; and the taking of Rabbah is the most brilliant event of his reign. M. Lambert's David, then, is as unlike the Old Testament king as possible. He is a veritable Louis XI. going about in Jewish garb. His talent, our author grants, is great; his power of organisation immense. He provides for everything, and turns a horde of Bedouins into a settled nation; but he has no notion of immortality in our sense of the word. He dreams that a sort of apotheosis has passed upon him, making his body imperishable; but his whole idea of the kingdom of heaven is as opposite as possible to that of Moses. All his anxiety is to put that kingdom out of this world, that he may here rule supreme. Moses, on the contrary, looked on it, not as something existing in

the heavens, but as coming down from heaven and going on here below.

So much for our author's fancy sketch of David. The style of it will give us a good idea of his manner. If anything hard to be explained comes in his way, it is quietly set aside as an interpolation, put in because the Jews were bound in honour to keep the Word of God, always "up to the dates and facts." Thus "the twelfth and following verses in 2 Sam. vii. are plainly inserted after David's death," because they overthrow M. Lambert's theory as to David's views of immortality.

When David fares thus at M. Lambert's hands, we need not expect much reverence for the Son of David. Our author handles His life in the most off-hand manner. He is to the full as offensive in another way as M. Renan. His Christ is an enthusiast who reads the different Jewish books, especially the later books of the Apocrypha, and forms a notion that the new world, the heaven upon earth, will soon begin, and that all must hasten to do their best during "the times for repentance" which are to usher in the new order of things. He, like David, believed that the old covenant of death might be annulled. God changed the decree of drowning in Noah's case; why should He not change the doom of death in the case of another human being? Far away in Galilee, M. Lambert's Christ had deeply studied the Prophets and the Apocryphal books, till, at last, the "*généreux descendant de David*," restless and full of vague hopes, as all His nation were at that time, had convinced Himself that the kingdom of heaven was now at last to be established, and that the promises made to David were to be fulfilled to Him. Our author, indeed, places our blessed Lord's conception of this heavenly kingdom far above the "narrow idea which always predominated in David's eminently selfish mind:" "no sin, no work, no marrying and giving in marriage, no family life, with its cares and distractions." But before this happy time of brotherhood and equality should come, the Prophets uniformly foretold a period of tribulation, during which all save the elect should be destroyed, while even they could only be rescued by the sacrifice of His life, paid as a ransom according to the provisions of the law. How the Carpenter's Son of Nazareth first came to believe in Himself and in His mission is a point which M. Lambert very conveniently leaves almost untouched. Why this Messiah should, even humanly speaking, have risen so immeasurably above all the other "messiahs" of the

time, it would of course be a hard matter to explain on M. Lambert's principles. Of our Lord's "distinct realisation of the times of repentance which must precede the end, and of the need that He should die for His people," we are told over and over again. But the kingdom of heaven could not be complete without the presence of its King-Messiah. Hence the idea of the resurrection, already broached in Daniel and in the second book of Maccabees, and figured in the prophecy of Jonah. God had promised to David that his flesh should not see corruption; but David did see corruption: hence, according to what our author calls the usual Jewish method, the promise, which is bound to be fulfilled, is transferred to some one else. "As for thinking that Jesus was intellectually separated from the Jewish family, that He had any object in view beyond the fulfilment of the Law and the Prophets, to do so is to substitute an irrational chimera for the most real and consistent personage whom history has ever made known to us."

As for the precepts of the Sermon on the Mount, they merely refer to these exceptional "times of repentance," to a society just on the eve of perishing by a sudden overthrow; they are comparable with the advice which St. Paul gives the Corinthians. Even the Lord's Prayer does not escape M. Lambert's "classification." "The coming of 'the kingdom;' the claim for daily bread till it should come; the deliverance from evil at the last: all other anxieties are futile; the life is more than meat." Miracles, of course, M. Lambert does not believe in. He declines to discuss the question of the supernatural until "*la vraie théodicée*," doubtless that which he is preparing, has been enunciated. Our Lord's first miracles consisted, he says, merely in "driving out the evil spirits" from those who would persist in prematurely calling Him the Holy One of God and other names which would be fairly His only when the tribulation was over and the kingdom really set up. That it was to be set up on this earth our author argues (and the argument is a fair sample of his method) from Christ's words to Pilate, "Now is My kingdom not from hence," meaning that by and by it will be. But what need of quotations to show the animus of a man who gathers from the account of our Lord and the woman of Samaria (which he accepts as "a truthful rendering of Christ's ideas," though he speaks very lightly of the "semi-Greek" gospel of St. John in general) the astounding inference that Jesus meant to share with Jehovah the honours of the new kingdom just as David had done before: "Neither here nor at Jerusalem will men by and

by worship the Father ; He will only be worshipped in spirit ; all other homage will be paid to the Son." It is startling to be told that Nicodemus and Joseph of Arimathea are types of a class of influential Jews who, "waiting for the kingdom of God," kept up the enthusiasm of Jesus by all possible means, since from His death was to follow the deliverance of Israel. But it is a still greater surprise to be told that, if what we read about Judas is not pure invention "to satisfy messianic data," he must have been acting in concert with our Lord, to hasten on the end which seemed to him too slow in coming. "What thou doest, do quickly," says our Saviour to Judas : therefore, argues M. Lambert, what he was about to do could not have been displeasing to Christ. As for Pilate, our author, like other writers of his class, thinks that we owe a good deal to his weakness ; "had Jesus been condemned to live," what a sad disenchantment "must have come about sooner or later."

Such is M. Lambert's Christ, a Being very different from Him of Renan, who, from a mild enthusiast, becomes, when soured by opposition, a bitter denouncer of all who do not follow him. Our author's Christ never loses his gentleness ; he grieves over the small number of the elect ; he is full of sorrow that by his word, during these times of penitence, the mother-in-law would be set against the daughter-in-law, and that a man's foes should be those of his own household. Equally different is he from the "mythic" personage of whom so many Germans say it is unimportant whether he existed or not. M. Lambert's Christ is strictly historical ; anything contradictory which appears about him in any of the Gospels, our author at once explains as "an interpolation."

But he is not content with showing to his own satisfaction that our Lord had no idea of immortality, except as a perpetuation of the life which now is under happier conditions. M. Lambert devotes more than a third of his five hundred large pages to an examination of the views of St. Paul, of whom he says that, while widening the gates of the Gospel kingdom to admit strangers to the commonwealth of Israel, he altered the terms of admission. Our Lord (he tells us) had made faith in Himself very secondary to an earnest "doing the will of His Father." St. Paul makes faith to be faith in Christ's resurrection, the one requisite for escaping death, not death spiritual, but the corporeal dissolution which must pass on all who had not faith. "Gamaliel used to say," says the Pirké Aboth, "take a guide, so as not to fall into doubt ;" and here we doubtless have the germ of that exalted idea of

faith which the Apostle of the Gentiles afterwards worked out. Though wherever a revelation exists, faith must be more or less meritorious; for he who reveals is naturally pleased to see his teaching accepted without hesitation. As for St. Paul, his teaching too had to be a good deal modified before the western world was able to accept it. He, like his Master, looked for an endless life upon earth, which the faithful were to enjoy when the times of tribulation were accomplished. Eighteen centuries have passed since that which he thought was destined to close the present order of things; and still "faith" is the "grand thing needful," for the Grecian idea of the immortality of the soul has taken in men's minds the place which that "dream of a kingdom of the elect upon earth" held in St. Paul's mind. The closing chapters, in fact, of our author's book are a comment on the remarkable statement made two summers ago at a meeting of the Anthropological Society, "that Christianity needed three thorough changes before it was fit for the Germanic races." And the unhappy certainty that notions like this are widely prevalent among our so-called scientific men, makes it essential that we should notice a work which else had been better left in oblivion. The sceptic, of whatever school, has ceased to make a jest of religion; his attitude towards it is one of cool patronising superiority. The world, forsooth, has been long hoodwinked by false notions of eschatology, awaits for its enlightenment the publication of M. Lambert's *Théodicée Naturelle*; and M. Lambert can see no absurdity in the idea that it is doing so. He has no fault to find with the Apostles; he looks down on them from the "*Sapientum castra serena*." They were honest workers in the cause of good, though it is a pity that St. Paul, by insisting so much on faith and urging that during "the evil day" all else was second to it, has opened a wide door for antinomianism. David, indeed, was a selfish voluptuary, who, by a strange infatuation (the stages of which M. Lambert neglects to trace), had got so far beyond the usual self-deifying notions of Eastern monarchs as to have persuaded himself, at least at one period of his life, that God would vouchsafe to him, His son and heir, and to his choice friends, an earthly immortality "with pleasures for evermore." Yet David's Psalms, being accepted as inspired, and having had applied to them "that strange Jewish method which puts off an accomplishment plainly impossible for the original grantee, and looks for it to be fulfilled for one of his posterity," kept alive among the Jews the hope of "a kingdom of heaven," in

which the elect should live on for ever upon earth, while those to whom the promise was first made should rise again to share in its final realisation. But the nation, which had been settling down into "Davidism," was startled by the sudden discovery, in Josiah's time, of the unique copy of the Law which David had concealed. This being read and published, there is a sudden reaction in favour of "Mosaism," of which the prophets had hitherto been the chief Apostles; and the "troublesome time," which in David's view was to be merely the last act of a political struggle and the final overthrow of his enemies, becomes, in the new order of ideas, a time of vengeance for finally severing the elect from the ungodly, needing, too, a grand expiatory victim, who is at the same time the Messiah of the chosen people. All these feelings find their development in Christ's life; and He gives Himself freely to death in the strong faith that such a sacrifice is necessary to take "even the elect" through the days of tribulation which He foretells. With Christ's removal out of the world comes the need of a new faith—the faith that He is, and that He is coming soon to inaugurate the long looked-for kingdom. This is what Paul insists on; and when he needs to strengthen the waverers, who see brother after brother passing away and yet the kingdom not coming, he uses the grand double *petitio principii*, which he works out in the (1 Cor. xv.) "Christ is risen, therefore you will rise; you will rise, because you believe Christ is risen." As to predestination M. Lambert only glances at the subject; "his continuing steadfast in the faith" will be the proof that a man has been marked out from all eternity to be spared in the day of God's wrath. The Jews were, of course, a difficulty, which the Apostle solves by expressing his trust that at the last God will "bring in" all of them who are alive on the earth. His view, then, of immortality is only wider than that of his Master in that he puts the Gentiles on the same level as the chosen people; of the resurrection itself he has formed no higher notion than Christ held. The body, indeed, will no longer be *ψυχὸν*, subject to decay; but it will still be a body living on the earth, and (sums up M. Lambert) if Paul's picture in 1 Cor. xv. is a revelation of the Christianity of to-day, all we can say is that a revelation can only mean the clearest possible explanation of the exact opposite of what ought to be believed. The Pauline doctrine, literally understood, can in no possible way be joined on to any general system of natural laws, for it arose from the same local accidents which had shaped out the beliefs of which it is only

another form, and it had in view, not man's moral progress here, but a strictly defined event (beyond the laws of morals) which was looked for in the immediate future.

M. Lambert adopts a strangely bold course with regard to the multitude of passages in St. Paul which speak of the death unto sin, and the life unto righteousness. He sets them all side by side, and understands them to assert that goodness and holiness are a kind of actual physical life working in our members—that sin works physical death. The only objection to this is, that it is contradicted by facts: the good die even as the bad, and hence the whole set of notions had to be transformed, and spiritualised, and impregnated with the neoplatonic theory of the immaterial soul. All our Christian views, so far as they refer to man's future, are absolutely and entirely Greek. What we call Christianity is flagrant infidelity to Paul and Jesus, no less than to Moses. "We, children of the old spiritualist races, have recovered our primitive dogma of an unknown eternity reserved for the souls of the good; but, marvel of marvels, we place this gift of life in the hands of the only God who ever denied immortality and life beyond this world to the soul." M. Lambert becomes eloquent when he attempts to prove that we "have no inheritance in David." As Dr. Colenso, when he took away from us St. Paul on the Romans, gave us something from Cicero, and an "Invocation to the God Ram," so our author takes us to Socrates and to the Rig-Veda, as the sole sources of the spiritualism of to-day. Hellas thus plays a higher part than even that assigned to her by Mr. Gladstone—"She was the purifier of the grand Aryan idea, joint treasure of all the noblest of human races." Our only consolation is, that if he is hard on what he deems "Popular Christianity"—if he goes far beyond Baden Powell's "Christianity without Judaism," declaring that the mighty civilising feeling of immortality has been hitherto kept down by having been made unfair and partial—he is as hard on the positivists:

"If (says he) there is anything as irrational as belief in a revelation, every distinctive point of which the believer has to deny or 'explain in a sense,' it is the method of observation which forces the observer to deny all that his method will not grasp. . . . In the moral world no less than in outward nature, all forces are correlatives, and we must never say that anything which has existed, is destroyed until its destruction can be demonstrated. Now, though the resurrection cannot grow out of any natural law, though each instance of it would be a special miracle, still the soul proves its personality by its constant victories over our material part; and, being a person—a separate

existence, it must be held to be everlasting, since we cannot trace its dissolution."

This is what M. Lambert gives us in exchange for Bible Christianity. This spiritual personality is strengthened by every victory over self, "self-love being the real law of death within us;" the new man grows up in us, and the touchstone of our spiritual life is the eternal truth, "we know that we have passed from death unto life because we love the brethren." Surely we have seen a good deal like this in some of Mr. Maurice's writings. He would be startled, however, by M. Lambert's conclusion, "Spiritualists are wrong in dreading the attacks now being made on what they hold to be the Divine warrant for their views: let them be assured that not until the old unspiritual dogma is rooted up will the true theory of immortality work in all its power and fulness." And here the Frenchman's consistency ("*logique*") comes out remarkably: he laughs at all attempts to *modify* revelation and "*develope* truth" out of its imperfect utterances. "In its essence a revelation must be immutable or it must be nought." Just in the same way his clear sharp identification of our Lord's mind with the mind of the old prophets, ought to be a warning to us how we dare to say that He merely quoted psalms and prophecies, because to do so was the fashion among the Jews. No one has shown more clearly than our author, that Christ sets His seal to the old Scriptures by the use which He makes of them. Herein M. Lambert is more consistent than many among ourselves.—But we have given enough of the work to show its dangerous tendency, to point out the strange perversity with which (as some creatures are said to find poison in the sweetest flowers) M. Lambert can cull nothing from the Psalms but proofs of David's bloodthirstiness and self-seeking. We will not insult really Christian people by supposing that this book could be mischievous to them. But, besides its importance as showing the condition of one section of the French religious world—so lamentably evidenced by the recent quarrels with reference to M. Coquerel's nominees—it is just the style of book which gains credit with many of the "irregular truth seekers" nearer home. The book is by no means such a farrago of incoherences as we might fancy it would be from the wildness of the author's views and the startling impiety of his occasional remarks. There is a method, a *logique*, in its impiety—granted its data, it proves its point—and over many people consistency has an amazingly seductive power. To all well-regulated minds, the very plainness of M. Lambert ensures

his being pretty harmless. But there are many the pride of whose human heart leads them to long for a natural theology on a basis apart from Revelation. Bishop Butler, M. Lambert, every thinker, comes to the same result at which St. Paul (taught by the Spirit) had arrived with regard to the two natures, the lower and the higher: but what (if we give up revelation) are we to say to those who deny that there is any lower and higher, who look on all such distinctions as just as antiquated as "up" and "down" in the system of the universe, and who make the individual the judge of what is good or bad for him? A man tells you he can see no reason why *his* good should not be the highest good for him; he is impatient of allowing any one else to define what is best for all. How would M. Lambert answer such an one? Must we, after all our philosophising, come back to the law and to the testimony, and confess that the only solid foundations of natural theology are based on revelation? It is a grave question whether natural theology is possible for us apart from revelation; and it is one which we would have the loose young thinkers of the day ponder very seriously. M. Lambert shows them the answer of an intelligent, and we would fain hope an earnest and truth-seeking Frenchman, to the question. He can see no hope for a rational eschatology but in the overthrow of Jewish ideas, and the establishment of his own *Théodicée*. Let us be thankful that even our Colensos have not reached quite so far as that. We, indeed, have not the same excuse: we have among us pure Bible truth, taught in various churches, whose differences are now happily mainly those of social arrangement. M. Lambert's countrymen were long under the yoke of Popery, with the added evils of Gallican erastianism and unbelief in high places and careless living everywhere. Then came the reaction in '98; and, since then, things have been tending backward towards Ultramontaniam; of which we have only to say that the antidote is worse than the disease. Meanwhile the reformed churches in France have long been in a sadly supine state, and though we must not despair of a body to which Vinet belonged and of which M. de Pressensé is still an ornament, the religious future of France is undoubtedly made more problematic by the want of real spiritual life among so many of its Protestant pastors. Perhaps the best hopes of France are to be found in the free evangelical life which, apart from the endowed churches of the land, has made so marked an impression on such centres of population and influence as Paris and Lyons, and which reacts beneficially upon a proportion of the pastors

and churches within the Reformed Church. The "Methodism," as it is called, of France, is now the new life within it, in antagonism both to Popery and Rationalism, as the Methodism of England in the last century became to this nation "life from the dead." We could not have a more striking proof of this than the "Meditations" of M. Guizot—the book which stands third on our list.

When he speaks of the men who have laboured since the revival at the commencement of the century, from Malan, Gaussen, and Encontre down to Pressensé and the Monods, when he quotes from the *Exposé des Œuvres de la Charité Protestante en France*, we feel that whatever vitality Romanism may have displayed has been due to the need of asserting itself against the truth, which would at once have given it a practical confutation had it continued in its old supineness. M. Guizot does not see this. To him, Protestant as he is, all forms of Christianity seem pretty much the same. He writes as a statesman, holding the balance impartially between "the sects," and specially reminding us that "in passing from his account of the Catholic to that of the Protestant revival, he need make no abrupt transition, for he is not going out of the Christian Church." Such a feeling detracts from the value of the book before us in several ways. Like other trimmers, M. Guizot fails in force and impressiveness; trying to embrace too much, he loses his firm grasp on all. But, despite this weakness, the work is not only highly interesting in itself, it is valuable as proving that there is an increasing disposition among thoughtful men to recognise the moral, and therefore social, mischief of loose theology. In this way the book is an excellent contrast to that of M. Lambert. M. Guizot is able even to come forward as an assailant; he gives solid reasons for believing in Christ and for putting aside all the vain inventions whereby men have striven to "superse" belief in Him. The book consists of eight meditations. In the first the author sketches the Christian revival which began in France with the beginning of the century, marking, of course, the growth of Romanism, the nominal religion of so large a majority of French people. Then he speaks of the progress of French Protestantism; and then he discusses the various philosophical systems, scepticism, materialism, rationalism, and shows the weakness and insufficiency of all. The book, we must remember, is part of a series. Though written by a Christian, it looks at the question, "Which system shall we adopt?" from a worldling's point of view. Christianity alone satisfies the whole of man's nature, and

it alone has sanctions which make it fit to be the rule of life for a community. These are M. Guizot's positions; and they do not admit of any great display of enthusiasm, even were such a feeling not entirely foreign to his nature. To be the French Hallam, to speak with a studied impartiality, and always to make you feel that he sees both sides of every question—that is M. Guizot's aim. Hence, while he says very little about the Protestant good works which accompanied the revival, he gives a long and interesting account of how Romanist activity has grown from very small beginnings. With a somewhat pretentious chivalry he seems to make it a point of honour to speak most of those who are not of his own communion. Still he is valuable for several reasons; in the first place, he has seen so many men both of the past and of the present generation, that he is rich in anecdote. His account of his interview with Comte, who came in 1832 to ask him (just after he had been appointed Minister of Public Instruction) to make a chair of general history and science in the Collège de France for his special behoof, is full of quiet humour, and may be read with advantage by any one who is tempted to become a disciple of the positive philosophy. Of almost every writer from whom he quotes M. Guizot has some personal knowledge, and is able to make some remark which brings the men in a measure before us. How well, for instance, is the supple Talleyrand, far too sensible to become an avowed unbeliever, despite his self-seeking and his political connection with the Atheists of the Revolution, "brought out" in the way in which he replied to La Révellière-Lepaux's proposal to establish the new worship which he called "theophilanthropy." "I have only one observation to make," said Talleyrand: "Jesus Christ died and rose again to found His religion. You ought to try to do as much if you mean to found one." Another valuable feature in M. Guizot's book is the skill with which he shows how every form of philosophy tends to materialism, *i.e.*, to mere Atheism. Even spiritualism does so, because, refusing to take the one step—the acceptance of revelation—which follows logically from its own premises, it is too weak to stand the assaults of those who say that metaphysics, religion, and all are only different forms of the same empty dream. This materialism, being fatalist, is necessarily subversive of anything like political liberty. And M. Guizot's calm discussion of the incompatibility of social freedom with the slavery of mind and soul which such a system generates, should be read by all who fancy that positivism and liberty go together because Mr.

J. S. Mill is a reformer. One more point M. Guizot brings so clearly forward that we can almost forgive him his too meagre and unappreciative sketch of the progress of French Protestantism. This is, the danger of indifference. "Carelessness," says he, "is the grand danger of the day. It is not that the masses deny God; it is that He is altogether out of their thoughts. They are utterly worldly, without a thought beyond the pleasures and the interests of life. It is the hardest thing in the world to make any impression upon men in this frame of mind." But it is time to give some notion of M. Guizot's plan in his eight meditations. He originally meant to follow up his first series of "Meditations on the essence of Christianity" (which some of our readers may remember) by a historical sketch. But the reason, he says, which has induced him to treat of the actual state of Christianity before dealing with its history, is that he sees men becoming daily more and more decided either in their Christianity or their anti-Christianity. Even the undecided are taking more interest than ever in the struggle that is going on around them. Even worldlings are recognising the political and social danger of anti-Christian doctrines, and are seeking in Christianity a support against this danger without venturing heartily to accept the essentials of the creed to which they cannot help clinging. Such a danger M. Guizot, living in the land of revolutions, where a theory (no matter how wild) is no sooner started than men are found to take it up, not as an intellectual curiosity, but as something to be acted out in daily life, is more able to judge of than we are in this happily quiet country. All the storms raised by Dr. Colenso and the Essayists are as nothing compared with what those mad blasphemers at the Liege Students' Congress (whose invitation M. Guizot congratulates himself on not having accepted) would raise if they had their way. Even here, however, in quiet England we see that the present is a crisis, as it is called, a time of general upheaving and confusion; and we might well tremble for the result did we not remember the promise that the gates of hell shall not prevail against us. M. Guizot thinks the crisis so important that he puts off his historical sketch, and devotes himself to trace the Christian revival in this century, and the outburst of spiritual philosophy which took place along with it, and also the anti-Christian reaction which came on soon after, showing itself in new forms of Materialism, Pantheism, &c., and now, lastly, in what is called "historical criticism."

In considering each system M. Guizot is careful to point

out its leading "idea," and, therefore, its weak point; for, as we said, his object is to prove that, revelation apart, Christianity alone can satisfy the demands of reason and common sense. "This is not (says he) a metaphysical treatise; it is an appeal addressed to fairly unprejudiced minds, urging them to put science to the test of the human conscience, and to distrust those systems which, in the name of so-called scientific truth, destroy that harmony which God's law establishes between intellectual and moral order, between man's life and his thought." Naturally in such a work the great question of biblical criticism is very lightly, or rather only indirectly, touched on. It is, no doubt, reserved for the historical sketch, and only comes in here indirectly, as in the appeal which our author makes to the spiritualists about their inconsistency. They hold innate ideas, they therefore believe in a God in whom these innate ideas reside, in a God, *i.e.* who is the maker and teacher of man. How then can they help receiving the fact of creation and that of a primitive revelation? And, these granted, all else follows in due historic sequence. We think the "meditation" on the spiritualist school deserves careful reading. It will be for many of us, if not a lesson in psychology, at any rate a reminder of what has been actually "proved," as well as such matter is capable of proof. Every phenomenon has a cause, and every quality must be inherent in some substance. These, at any rate, are two innate ideas, of which the materialist cannot give an account, which he cannot include in the "facts" which form the whole of his physiology. Cosmology, again, gives, as our author reminds us, the strongest confirmation to spiritualism, because it establishes the fact of a creation, as opposed to the "eternal unchangeable order" of the old Atheists. This is turning the tables on the sceptical geologists; and we do not think enough has been made of the argument by our Christian reasoners. Even successive transformation does not explain the world as it is: for "God is as necessary to create the primitive type as He is to make the man himself." But the weakness of the spiritualists has been that they have stopped short at psychology, instead of going on to the cosmology and history to which it is necessarily only an introduction; and thus there has been a constant tendency among them to fall away into that rationalism which is the natural end of merely psychological inquiry, which errs on the one hand by leaving many of the elements of human nature out of account, by throwing aside with contempt everything it cannot understand, and at the same time by pushing the pretensions of human science beyond proper

bounds. After all, rationalism feels its own twofold weakness. Its historian, Mr. Lecky, confesses that, if it has freed us from "theological conceptions" about sin, and from those dreams of future punishment which so long hardened the human character, it has at the same time done a great deal to destroy disinterestedness and self-sacrifice, and to dig the grave of enthusiasm. And then, on the other hand, it can never feel secure of its position against those who call themselves positivists, materialists, or sensualists, who say that nobody can tell whether there is or is not anything beyond the world of sense, and that, therefore, metaphysicians are just as foolish as theologians for dogmatising about it. We may guess that M. Guizot's verdict on positivism would not be particularly lenient, from the way in which, as we have seen, he treated M. Comte's by no means modest pretensions. "M. Comte was his own apostle." That sentence sufficiently characterises the man and his system. The wonder is how he could at first have made such an impression on Mr. J. S. Mill. Of course they quarrelled long before; and Mr. Mill has now set the seal to his disobedience by entering on that parliamentary life which his quondam master forbade his disciples to aspire to, "until in a new and improved world the true servants of humanity should come to undertake the proper management of affairs." Unhappily, we know too much in England of the positive school, and can feel the force of M. Guizot's exposition of its fundamental error. It fails to recognise the natural and permanent diversity of man's various intellectual states, and will only admit the existence of one—the scientific state. Now, language, on which M. Guizot lays great, but not too great, stress, might have taught men that knowledge, science, belief, faith, are not different names for the same idea, but are the signs of really different conditions of mind. But the greatest absurdity is that this philosopher, who spoke of the theological and metaphysical states as having had their day, ignoring the fact that they, as well as positivism, are found co-existent at every age of the world's history, actually came back to theology after all, and tried to turn his own system into a religion.

We have not space to follow M. Guizot through his long and valuable chapter on Pantheism, in which he rises to flights of eloquence, unattempted in his other chapters. "When Spinoza said, 'Man is essentially a thinking being, and the highest degree of human knowledge must needs be the highest degree of human happiness,' he misunderstood and misrepresented human nature. What would become of us if before we

could believe in God we had to wait till the philosophers have solved those problems which are still and always will be a hopeless puzzle? Just as God, while He made man free, took care that the order of the world was not entirely handed over to men's disputes, so He has provided for the sufficient spiritual nourishment of the whole race, at the same time that He allows a few here and there the prospect of a fuller satisfaction." The Pantheists are weak because they utterly ignore the inductive method. Whether it is Spinoza's *substance* or Hegel's *idea*, it is all the same; they lay down an axiom instead of studying the realities of the universe. Hence their key never fits any lock, and the commonest facts give the lie to their deductions. The connection between Pantheism and absolutism, and the way in which Pantheism (however idealist) leads on inevitably to the worship of man by himself, are well brought out by M. Guizot:—"Under the blast of Pantheism all real and personal beings disappear, and are succeeded by an abstraction which becomes in its turn a being, 'the only being,' without personality or free will, absorbing all in a bottomless abyss in which itself is swallowed up, and in which everything of which we try to offer an explanation straightway disappears. Did ever the dreams of any theology or the wildest fancies of man's imagination, shape out anything so absurd as a system which from first to last is utterly at odds with the facts of science, as well as with the instincts of our race?" Materialism is much more consistent; its terrible consistency is perhaps its most striking feature. You cannot be a half-and-half materialist. You begin with Locke, wanting something by way of counterpoise to the spiritualism which you distrust; but must go on till you come, with men like D'Holbach, to the denial of liberty, duty, a future life, everything which cannot be an object of sensation. It is important that this should be borne in mind, for (as M. de Rémusat remarks) these materialists are for ever denying the results of their philosophy, "they seem to be as ashamed of 'matter' as weak converts in old times were of Jesus Christ," and are never willing to confess what are the plain and inevitable consequences of their theories. The instinct of mankind is against them: man does not and will not believe exclusively in matter, nor can all the philosophers persuade us that there is no real distinction between matter and spirit. Quite as clear as the difference between the *one* and the *not one*, is the fact that our human nature is at the same time one and made up of divers parts; and then the consequent fact is surely undeniable, that "while fatality is the

condition of man in his bodily life, liberty is his privilege in his moral life." And that word *moral* (as M. Guizot remarks) involves a whole philosophy in itself, pointing as it does to another essential and ineffaceable distinction between soul and body: the body knows nothing of morality. How body and soul are so united as to form one being, is the mystery of religion, "the problem of philosophy." The materialist solves it offhand by just denying that there is any complex unity at all, viz. by suppressing the soul altogether. But if we suppose

Heart and mind of human kind

A watchwork like the rest,

how do we account for the rise of the "governing faculty?" If will is only a form of instinct, how can we explain its empire over instinct? That is the weak point of materialism, and, feeling it to be so, its advocates have brought in the notion of "force," at one time spoken of as something distinct from matter, at other times mixed up with it; and then they think they have explained all the mysteries of man and of the universe. It would be very interesting to follow M. Guizot through all his remarks on scepticism, and we should find that the "Systematic Scepticism" of M. Jouffroy has many points in common with the philosophy of the absolute and unconditioned, of which we heard so much in the controversy arising out of Professor Mansel's lectures. M. Jouffroy says:—"All belief is founded on a blind act of faith—blind though irresistible. In fact there is no contradiction between faith and scepticism; for instinct makes man believe just as reason makes him doubt. . . . Sceptics believe like other people; nor is it denied that man has a right to believe. But it is absurd to talk of coming to close quarters with scepticism, and of pretending to prove that we see things as they actually are. Surely to pretend to do this is merely to reason in the old vicious circle, and to demonstrate man's intelligence by itself." M. Guizot's answer to this, chiefly quoted from Royer Collard, is well worth reading. It brings out strongly the value of the universal testimony of mankind. "If all men believe in the outer world, then is this belief a fact in our intellectual constitution." Further, the authority which convinces us of the separate existence of matter is that of the primitive laws of thought, unchangeable, that is, and absolute. If you want to prove that all our faculties are deceptive—they must all stand or fall together—how can you do it but by convicting them on their own testimony, which testimony, remember, it is the very object to throw discredit upon. The scepticism which

denies the existence of an outer world, and the materialism which says that what we see and feel is all in all, seem to stand at opposite ends of the philosophic scale. Yet their practical results are strangely similar. And it is in the mischievousness of these practical results that M. Guizot, acting on the principle of which we have spoken, finds their strongest condemnation.

In his last meditation our author has many very suggestive remarks on the state of things among the non-Christian portion of his countrymen. We have referred to these before; and have pointed out how this capital evil of carelessness, of utter indifference to things spiritual as well as to any religious faith, is only too prevalent among us. As for the "truth seekers," of whom M. Vacherot is the representative, their miserable weakness is well shown. "God is all very well," says M. Vacherot, "but remember that perfection can only exist in man's thoughts. The perfect Being of Leibnitz and Descartes is all one with the God of Plato and Malebranche, and the theologians. He is a mere ideal." So we are to make our God into a mere conception in order that metaphysics may deign to receive Him; and then, of course, the result is Atheism on the one hand, and Pantheism on the other. It is not vague dreams like this which will stand against the tide of carelessness and impiety, of the strong setting in of which we do not need M. Guizot to warn us. He calls on all "truth seekers" to consider the undeniable weaknesses of every human system, and to ask themselves the simple question, How is it that for eighteen centuries, "*la pensée Chrétienne*," so often sorely tried, has sufficed for the instincts and the needs of humanity? The answer will be, Because it leads man nearer to the springs of truth.

We have gone at some length through the philosophical part of M. Guizot's work with the express purpose of showing how easily, by one who is no professed philosopher, the reasonings of the different systems may be met. The same intellectual dangers beset us which are threatening the intellect of France, just as we have to dread the same degraded indifferentism which so largely prevails there. M. Guizot has done what has often been done by English writers. But it is a work which can never be done too often; for, as the old fallacies are reproduced under new forms, so must the method of meeting them be put forth again and again, altered in appearance, though the same in substance. How our author has done it our readers are now (we hope) in a position to judge.

We have already said that his sketch of the Protestant revival is imperfect. He purposely leaves gaps, and his statesmanlike impartiality leads him to throw in orthodox and unorthodox with but little distinction. Many names, familiar to those who watch Christianity on the Continent, will be found strangely absent. M. Grandpierre is not once mentioned. And we think (as we hinted before) that our author errs in taking far too high an estimate of the Romanist revival. He himself shows the miserable shifts to which men like La Mennais were reduced, and how such "liberal Catholics" as Montalembert, Lacordaire, and Frederic Ozanam were crushed the moment they ventured to try to put something like life into the old dead system. Led away by the social good which he tells us Romanism has effected, dazzled by the number of "good works," of which he gives a list, he does not see, what those who read his sketch will not fail to notice, the inherent weakness of Romanism. With all its "good works" it never rises to anything like a right conception of spiritual truth; by all its "labours of charity" it is not saved from the constant danger of falling into mere fetishism. Look at the matter of Labre's monument at Arras; or, better, open the book which we have placed last on our list, and which we only notice to reprobate most thoroughly. It is a series of letters written to comfort and edify a young German, thrown much among scoffers, who laugh at his holy water. If he finds no better way of convincing them than this book supplies, the laugh will, we fear, still be on their side. When a man is told that holy water may produce wonderful effects because iodide of potassium is a most powerful agent, though insignificant to look at, and because the sting of some very small fly is able to kill a man, we ask, did Mgr. Gaume ever hear of one Francis Bacon? The whole book is a choice example of the unchangeableness of Popery. Among themselves it would seem the Romanists still employ the most exploded sophisms of the schoolmen, and actually accept them as convincing strokes of reasoning. "The religious history of balm, and its symbolism," which forms one of Mgr. Gaume's least absurd chapters, sufficiently shows the nature of a book which comes out with the highest authority—letters from Cardinal Alfieri, and from the Pope himself, and a Papal brief recommending it—and which, therefore, may be looked on as the "*dernier mot*" of Romanism on the subject.

It is very disappointing that M. Guizot has not made any effort to sift the Christian tares from the wheat, that he takes

Romanism so much at its own valuation, and looks at it as a statesman (and yet a statesman can scarcely fail to see its inherent unsoundness) rather than as a Bible Christian. Still the appearance of a book like this by such a man is a proof that Christianity has more life among our neighbours than we sometimes imagine. And we, looking on at a distance, are better able than he is to trace that life to its human source. We can recognise thankfully the labours of the band of Genevan "Methodists" who, as early as 1802, began the work of revival. We can rate at their proper value the labours of such a man as the Scotch Haldane, who went over to work with them in 1816. And we are sure (as we said) that whatever awakening there may have been in Romanism or among any other religious denomination, was mainly due to the spirit awakened by men like Gausson, and Bost, and Gonthier, and Malan.

ART. II.—1. *Science and Practice in Farm Cultivation*. By JAMES BUCKMAN, F.L.S., F.G.S., late Professor of Geology and Rural Economy at the Royal Agricultural College, Cirencester. London: R. Hardwicke. 1865.

2. *High Farming without Manure. Six Lectures on Agriculture delivered at the Experimental Farm at Vincennes*. By M. GEORGE VILLE, Professor of Vegetable Physiology at the Museum of Natural History, Paris. London: William Oliver.

SCIENCE was not accepted by the agriculturist as the true expositor of the laws relating to vegetable life without a desperate resistance. It required fifty years to divest the mind of the husbandman of the crude ideas, inherited from his forefathers, as to the danger of book-learning and experimental farming. The only rural economy acknowledged by him was *frugality*, and a firm adherence to the practice of his ancestors; and it was not until the commencement of the present century that other views began to be entertained on the subject. Some, even amongst the foremost cultivators, doubted whether modern science could ever be brought to bear upon the practice of the farm; and so narrow were the notions which obtained as to the expenditure of capital, that the intelligent author of *The Georgical Essays*, published in 1772, doubted whether the drilling machine could ever become common "on account of its heavy cost!"* What would Dr. Hunter say now, if he could rise from his grave and attend the meetings of the Royal and other agricultural societies, and witness the display of implements and machinery employed in agriculture, involving an outlay of hundreds, and in some cases thousands, of pounds, but which are now considered indispensable on every respectable farm of any extent? It was no ordinary battle that Sir Humphrey Davy and his compeers had to fight before they could get even a hearing from the great body of farmers; and far into the present century the old cultivators maintained a position of hostility to the introduction of science upon the land.

We must not, however, judge the agriculturist too severely for the slowness with which he abandoned the dogmatic and

* Dr. Hunter gave 12*l*. for his own drilling machine.

stereotyped maxims of his predecessors, especially when we reflect that nearly six thousand years of the age of man had passed away, before the men of science themselves were fully emancipated from the fetters of empiricism and day-dreaming, and their system placed upon the sound and rational basis on which it now stands. Very different were the positions and advantages of the two classes. On the one hand, the husbandman of former times, isolated by his occupation from the society of literary men, debarred by a life of incessant bodily labour from a course of reading that would enlighten his mind, and holding daily intercourse only with men a shade lower than himself in the scale of intelligence—who can wonder if he should look with suspicion on theories proposed by men whose only claim to his notice was their declaration of the result of experiments on the nature of vegetable life, and who called upon the husbandman to abandon forthwith nearly all those traditional ideas which he had been taught to view as the perfection of wisdom and the only sure road to success.

On the other hand, we see the man of science from the earliest ages addicted to—

“Reading, research, and reflection with no laborious manual employment to distract his attention or exhaust his bodily powers, leisurely conceiving and following up an idea to its final result. He can, at his ease, compare the various phases of an experiment as they present themselves, and thence draw his conclusions; noting them down to be considered and reflected upon, until he arrives at that point which demonstrates—or otherwise—the correctness of his deductions; and he is enabled to determine whether he can safely adopt them as the bases of a theory.”—*Wheat*, by an old Norfolk farmer, Preface.

Notwithstanding these advantages, the progress made by physical science up to the commencement of the eighteenth century was, as every one knows, very small and conclusive; and, with this fact before us, instead of wondering at the resistance of the husbandman to the demands of scientific men with regard to the management of the land, the marvel is that so much has already been effected, that long prejudices have been so steadily abandoned, and that the two classes have so cordially joined and gone hand-in-hand in the work of farm management. The admonitory remarks of such men as Davy and his successors in the field have not been thrown away. The clouds of unreasoning mistrust are rare, and the mind of the husbandman is now fully open to the revelation which science makes as to the production and sustentation of vegetable life.

The volumes named at the head of this article are of a highly scientific character, and both treat of the best methods of growing good crops. That of Professor Buckman describes the origin, nature, and properties of the various products of the farm, the forest, and the orchard, and furnishes instructions for the production of the best types and the largest crops of the several kinds of farm plants. The second work, by M. Ville, is a remarkable production, but the title is a misnomer, so far as the question of manure is concerned. Instead of farming *without* manure, M. Ville uses *special* manures, from which circumstance we are led to conclude that, after the French practice, he calls these "*amendements*," or improvers of the land, in contradistinction to "*engrais*" or manures proper. The treatise, which comprises six lectures, has made some noise amongst agriculturists by the number of protracted experiments which the author has instituted, by the precision with which they have been conducted, and by the remarkably successful results to which they have been brought. We shall review these books separately, taking that of Professor Buckman first, as relating to the various species of produce, the best types, and the best methods both of obtaining them and of securing their permanence of character and utility.

The first part of the work is devoted to the subject of the production of root crops, the secret of which is described to be, first, to obtain seed raised from the most perfect types that can be procured; and, secondly, to avoid seed that has grown near other varieties, unless, indeed, new and improved types are wanted.

In order to prove the importance of procuring seed from selected and perfect roots, Dr. Buckman planted a malformed parsnep and a malformed swede turnip. The seeds from these were sown in April, 1861, without manure, and also some seeds of a perfect parsnep. The result was that seventy roots of the degenerate parsnep seed weighed 7lbs. 4oz., whilst seventy roots from the seed of the perfect one weighed 14lbs., or nearly double. In like manner, the seventy roots from the seed of the diseased swede weighed 19lbs. 8oz., while seventy from that of good swedes grown in the same field weighed 35lbs. These two experiments are important, being quite decisive as to the necessity of selecting the roots intended for producing seed, and the author deduces from them the following conclusions:—

"1. That a degenerate stock will, as a rule, result from the employment of degenerate or badly-grown seed.

"2. That, besides ugly, mal-formed roots, degenerated seed does not produce nearly the weight of crop of good seed under the same circumstances of growth.

"3. That, by means of selections, we may produce roots that are well shaped, and that have the capabilities of affording the best crops.

"4. That by designedly selecting mal-formed degenerated roots for seeding, we may produce a seed that will result in as great, or greater, degeneracy."—P. 27.

Of the adulteration of seeds of roots—especially of turnips—an interesting account is given in Dr. Buckman's sixth chapter. It is laid down as an axiom :

"1. That all well-grown and well-preserved new seed should be capable of producing or germinating to the extent of ninety per cent. at least ; and, 2nd, that seeds in general, and turnip seed in particular, as usually delivered to the farmer, is incapable of germinating to the extent of from twenty-five to thirty per cent., and frequently even more."—P. 29.

The way in which the adulteration is effected is, by mixing any proportion of rape or charlock seed with the turnip ; and, although the latter is somewhat larger than the former, the difference is so small that it is impossible to detect it. But, to prevent the baser elements from growing, which in time would betray the seller, it is necessary to destroy the germinating power ; and this is done either by heat or by a chemical preparation. The seeds thus emasculated may then be mixed together without any fear of detection, except by *testing*. The testing may be accomplished by placing a given number of seeds in a flower-pot with a quantity of sand and other soil. If kept warm and moist the seed will germinate, and the proportion that does so indicates the amount of adulteration, due allowance being made meanwhile for an average number that, in a good sample, will be abortive. Thus, suppose that out of a 100 seeds only 70 should vegetate, it may be fairly presumed that the sample is adulterated to the extent of at least twenty per cent., and so on more or less. The preparation or killing of the spurious seed, which in the trade is known as O. O. O. seed, is a regular business ; and Professor Buckman could have obtained any *large* quantity of it, but when a small sample was requested, it was asked, "For what purpose is it wanted ?" Its value is about half the average value of turnip seed ; and, as much more seed is always sown than is necessary for a crop, unless it is previously tested as above, it is not easily detected.

The experiments of our author, though few in number, are satisfactory. The first is a trial of ten good samples of turnip seed, 100 of each; and the result was, that an average of ninety-two per cent. germinated, only eight per cent. proving abortive. The time of coming up varied from seven to eleven days, the seeds being partly of the previous year's growth and partly of the same season (1860). The second experiment was also of ten sorts of 100 seeds each. This gave an average of sixty-eight good and thirty-two abortive ones. This was a "market sample" and speaks for itself. The third experiment was on seeds, also of a "market sample," of which an average of 77.6 germinated, and 22.4 were dead seeds. The fourth was on samples procured from farmers or purchased of seedsmen professing to be the growers. Of the ten specimens, an average of 70.2 per cent. of live, and 29.8 of dead seeds was the result. The number of days in coming up of the second sample was from ten to fifteen; that of the last was from four to eight days, with one exception of eleven days.

But the adulteration is not confined to mixing killed or O. O. O. seed with the good. *Old* turnip seed is also commonly mixed with new, and a portion of the former will frequently not germinate. It is a question, however, whether this is an evil, so far as the crop is concerned, it being possible that the abortive seeds were too weak to retain the germinating power over the second season; and it is doubtful whether, under any circumstances, they would have produced good bulbs. It is well known that the seeds of the *Brassica* family of plants, when kept from the external air, will retain their vitality any length of time. It is frequently the case that when a piece of old pasture land that has in remote times been under the plough, is again broken up, charlock and wild rape have sprung up spontaneously in great abundance. We have seen the site of a house that had stood at least 200 years, when cleared and dug up, covered in a few days with charlock, the seeds of which must have been dormant at least from the time of the house being built.

As to this point Dr. Buckman made a very decisive experiment, which is too valuable not to be given in full. It was a second trial of the *good* seed used in the first experiment, after keeping it two years longer, and the result was as follows:—

Species.	Date of growth.	Came up in 1860.	Came up in 1862.	Additional loss.
1. Mouse-tail	1859	96	46	50
2. White Globe	1859	86	44	42
3. Nimble Green Round	1859	96	94	2
4. Lincoln's Red Globe	1860	90	58	32
5. Yellow Tankard	1859	92	62	30
6. Smart's Mouse-tail	1860	98	92	6
7. Green-topped Stone	1860	84	88	gained 4
8. Sutton's Imperial Green Globe	1860	98	80	18 lost
9. Green-topped Scotch	1860	90	86	4
10. Early Six Weeks	1860	90	70	20
Average germinated	—	92	72	—

It appears from this experiment that if good seed loses eight per cent. by abortive seeds when sown the first or second season, by keeping it two years longer an additional average loss of twenty per cent. is sustained. The results, however, are very partial if we take the specimens individually; for whilst numbers lost fifty, No. 3 lost only two, No. 6 six, No. 7 gained four, and No. 9 lost four per cent. These differences, while they show the superior germinating power of certain varieties of the turnip, prove also, in some measure, the correctness of the opinion we have expressed respecting old seed. The average loss was twenty-eight per cent. against eight in the first sowing.

Apropos of this subject of adulteration Dr. Buckman quotes a letter offering a "new and improved method of killing seeds, without the use of chemicals, so that seed in the O. O. O. state has not the unpleasant smell it has when killed in the old method. The respectable seedsman to whom his letter was addressed called upon the writer, but of course declined purchasing his secret, and sent his letter to Professor Buckman.

The injury caused to the root crops by insects is very extensive. The flea beetle (*Haltica nemorum*), of which there are several species, attacks the turnip in the first leaf. The *Psila rosea* infests the parsnep and carrot, the *Anthrenya Betae* the mangold wurtzel. To destroy the first our author recommends drawing a thin board, covered with tar or some other viscous substance, over the ground on which the turnip is coming up. When it approaches the insect it skips and adheres to the board. By this means he has saved his crops from their depredations. The beet fly is not so easily managed, the only method proposed being the employment of

children to crush the grub in the leaf of the plant, a tedious and troublesome process.

Part II. of Dr. Buckman's book relates to the growth of "good grasses," and to the nature of meadow and pasture land. Between these the author makes no distinction, except that he ranges them under the heads of permanent and artificial pastures.

The permanent pastures include—1st. Moors and uplands; 2nd. Commons; 3rd. River flats and lowlands; 4th. Irrigated, or water meadows; 5th. Meadows, or permanent grass inclosures.

The artificial pastures are formed of seeds of clover, trefoil, hay grass, and other kinds of fodder plants, well known to every farmer. These are allowed to remain one, two, or three years before they are again broken up by the plough, to be succeeded by wheat.

The various species of grasses adapted to the character of the soil for forming permanent pastures are to be found in the circulars of the seedsmen; the most complete of the kind which we have seen being that of Messrs. Lawson and Co., of King-street, Cheapside, London.

Chapter XII. is devoted to an enumeration of the weeds infesting pasture land, a subject of all the more importance because but little attention is paid to it by farmers generally. Many confine their efforts to the extermination of docks, thistles, and nettles, whilst too many allow even these to disfigure their pastures till they have matured their seeds. To show the mischief that must arise from this neglect, we extract the following statement of the prolificness of the various kinds of thistle:—

The Musk Thistle . . .	3,750	seeds to each plant.
The Spear Thistle . . .	30,000	" "
The Corn Thistle . . .	5,000	" "
The Stemless Thistle . .	600	" "

Now, each of these seeds is furnished with an apparatus, which renders it as light as atmospheric air, so that it frequently flies with the wind for many miles; and no farmer, however careful himself, can keep his land clear if he only have slovenly neighbours. Some pasture plants are poisonous to cattle, as the meadow saffron (*colchicum autumnale*), by eating which many have been killed. The upright buttercup (*ranunculus acris*) is also poisonous; whilst others, as crow garlick (*allium vineale*), hog's garlick (*allium ursinum*), and jack-in-the-hedge (*crepisium allecaria*), when

eaten by the cows give a bad flavour to milk and its products. In the formation and management of grass lands, the best species of grass should be employed with a few other plants that yield much healthy fodder. All others, which occupy room and afford little or no nutriment, should be eradicated. The best method, however, of treating pasture land is draining and liming. These two operations will destroy the coarse grasses, rushes, and weeds, and will bring up sweeter, more nutritious, and more productive species.

Instructions for the irrigation of pasture land are given in Chapter XIII.; and where water can be obtained and thus applied, the grass is not only doubled in weight, but it comes earlier in spring, the time at which it is most wanted. We have seen good grass on "water meadows" so early as February, when other meadows were quite bare. The land must be thoroughly drained before it is formed into a water meadow, in order that as soon as the water is let off from the surface, that which has penetrated the soil may drain away. We know water meadows that have been formed above sixty years, and are now as productive as ever.

In Chapter XV., on the management of permanent pastures, our author strongly recommends "*draining, acts of husbandry*" (by which, we suppose, he means harrowing or scuffling), and top-dressing with decayed vegetable rubbish and any kind of artificial manure. When pastures are fed on by cows and other cattle, this is especially necessary, in order to sustain the fertility of the soil, which becomes exhausted in time from the produce being taken off year after year without compensation. Chapter XVI. refers to the formation and management of lawns, in laying down which the shorter and finer grasses only should be employed. And as by constant mowing they will become impoverished, they require every few years to be top-dressed with soot or a little guano. If this is not done, the grass will be killed with moss and various species of agarics which are engendered in the roots.

The third part of our author's volume relates to the growth of clovers, which are valuable and important adjuncts as fodder, whether in permanent pastures or in alternate husbandry. The papilionaceous character of clover has introduced it to a most numerous family of plants, in size, form, and growth so discordant that nothing but the identity of the single flowerets entitles them to relationship. Science, however, with its rigid adherence to "order," has classed the clover with the pea, the vetch, the furze, the broom, the locust or acacia tree, the laburnum, the ebony, and a host of

other papilionaceæ, having nothing in common but the form of the flower and the stipules of the leaves.

Clover belongs to the genus *Trifolium*, of which there are eight cultivated species :

1.	<i>Trifolium pratense</i>	or, Broad-leaved clover	Flower, purple.
2.	" <i>medium</i>	or, Cow-grass clover	" pinkish purple.
3.	" <i>incarnatum</i>	or, Carnation clover	" red.
4.	" <i>hybridum</i>	or, Alsike clover	" pink.
5.	" <i>fragiferum</i>	or, Strawberry-headed clover	" pink.
6.	" <i>repens</i>	or, White Dutch clover	" white.
7.	" <i>filiforme</i>	or, Suckling clover	" yellow.
8.	" <i>procumbens</i>	or, Hop clover	" yellow.

No. 1, the broad-leaved clover, is the kind most cultivated and when a crop can be obtained, it not only produces the greatest amount of food, but has greater permanence than any other kind, except the Dutch clover, which is perennial. Seedsmen make a distinction in the broad-leaved clover, terming one variety, *T. pratense perenne*; but it is believed that the difference is accidental, and owing rather to difference of soil, culture, climate, &c., than to any specific difference. It is frequently found in meadows, where it assumes a permanent character, and adds greatly to the value of the pasturage.

No. 2, cow-grass, has of late years attracted much attention as a most useful fodder plant. It is found in a wild state on sandy soils, especially above the coal fields in Wales. It is distinguished from No. 1 by its zigzag form of stem, as well as by the circumstance that the stem is solid, not hollow. There is also a slight difference in the colour of the flower.

No. 3, the crimson clover, is a modern plant in English husbandry, but it is now much cultivated in the southern counties. It is usually sown on wheat stubbles, immediately after harvest, only requiring to be harrowed in to acquire strength to bear the winter. It comes forward early in the spring, and is fed off or mowed soon enough to allow of a crop of turnips the same season. It is thus essentially "a stolen crop," or intermediate, and, with good farming, must be of great value as such, its produce being large.

No. 4, Alsike clover, is a medium plant between the broad-leaved and the white Dutch. It will scarcely answer to let it stand a second year, but yields a good and valuable swarth the first year.

No. 5, the strawberry-headed clover, is valuable on cold, wet pastures and hungry clay soils. In its creeping habit it resembles the Dutch clover, and also in its foliage.

No. 6, the Dutch or white clover, is a universal plant throughout England, and is invaluable in pastures both in meadow and upland. It appears to be spread over the whole soil of this country, springing up spontaneously by the wayside, on commons, or wherever it can find soil enough to take root. It appears in abundance after liming the land; and history tells us that, after the great fire of London in 1666, when the wreck and rubbish were cleared away, the whole vast area was nearly covered with white clover after the soil had been dug over. It is a small but very nutritious plant, and by its trailing habit it helps to fill up the ground between other larger plants in pastures. On light soils it is frequently sown alone.

Nos. 7 and 8, the yellow and the hop trefoil, are wild plants, but have been cultivated to a small extent, though they are of little value as forage plants.

Chapter XIX. contains a dissertation on the varieties of red clover, and on the difficulty of obtaining seed of the *T. medium*, which, on account of its valuable properties, is much sought after. Chapter XX. relates to the "clover allies," the first of these being the *ulex* or furze, which our author condemns as not possessing any valuable properties as a fodder plant, except that of growing where nothing else will, and without manure. The most important of these "allies" are the several varieties of the *lotus* or bird's-foot trefoil, the *medicago sativa* or lucerne, the *melilotus leucantha*, a biennial with white flowers, and the *onobrychis* or sainfoin, of which there are two varieties, both valuable. An interesting and instructive account is given of the mixing of the seed of burnet (*poterium sanguisorba*) with that of sainfoin imported from abroad. So extensive is this adulteration by the foreign seedsmen, that Dr. Buckman found from 20,000 to 40,000 burnet seed-pods in a bushel of what was professedly sainfoin seed. The consequence of this mixture is, that the latter is very soon smothered by the burnet, the capsule of which contains two seeds, while that of the sainfoin has only one. Burnet is cultivated in the eastern counties of England to a small extent, but it is merely as a shifting crop. When mixed with sainfoin, as it grows much faster than the latter, it soon overcomes it. The most dangerous kind is the *poterium muricatum*, a "false burnet," which produces "a sticky, a non-succulent, and in-nutritious herbage." Dr. Buckman calculates that a bushel of sainfoin which he examined contained 64,000 capsules of this plant, or 128,000 seeds. This would sufficiently account for its overgrowing the sainfoin.

Chapter XXI. is devoted to the "clover sickness," which our author ascribes to the seed being brought in increasing quantities from warm climates, where it flourishes more vigorously than with us, the effect being heightened by the seed being committed to a thin, poor soil, and not sufficiently manured. We have long been of opinion that, in addition to these causes, old seed, the vitality of which has been injured by bad keeping, is frequently mixed with new good seed; and although the former may vegetate at first, it is not strong enough to stand the winter's frost. There is no doubt that the soil and climate of the South of France and the United States, whence the chief importations of clover seed are obtained, are more favourable to its full development than those of the United Kingdom; and if we could grow enough for the consumption *at home*, and sow it the same or next season, it would be better than sowing imported seed. This, however, is impossible. The remedy recommended is paring and burning, by which a supply of manure directly adapted to the clover is produced. The most probable cause of the failure, however, according to the author, is, the practice of sowing the clover with the barley, by which the nutriment is all taken up by the latter, and, in addition, the clover is smothered, or at least weakened.

Chapter XXII., on the weeds of the clover field, reveals a fearful "adulteration" (*natural*, we presume) with the seeds of weeds. The average number of these in the bushel, in different kinds of clover, were found to be as follows:—red clover, 728,933; cow-grass, 401,066; white Dutch clover, 2,768,106. These were all examined in 1859; and in 1863 the white clover was again found to contain 1,331,200; and so on. In three fields examined by Dr. Buckman, sixty-four kinds of weeds were found amongst the clover; forty-six weed plants were taken from the square yard, and there were from 7,840 to 70,400 seeds of weeds in a pint of the seed, the larger number being in the white Dutch clover. No wonder if the clover should succumb before legions of enemies like these.

Chapter XXIII. relates to the parasitic plants attaching to the clover. These are the *cuscata*, or dodder, and the *orobanche*, or broom rape. There are two species of dodder, but both consist of a mass of pink tendrils, having the appearance of a tangled bunch of red thread. They have no foliage, but, at intervals, compact bunches or knots of small flowers of a similar colour to the tendrils. These plants spring from seed in the ground; but attaching themselves to the clover stem by rootlets, they are soon lifted from the soil, and so

become purely parasitic, spreading rapidly in all directions, reaching from plant to plant and feeding on the juices of the stem, which is soon exhausted and borne down. Many fields of clover are wholly destroyed by this weed, and some farmers have been obliged to burn the whole crop in order to destroy the dodder, root, branch, and seed. The broom rape has a different growth. The seed, which is very small, like dust, springs also from the soil, and fastens itself to the roots of the clover, and being a larger plant, draws from it all the nourishment. The best way to destroy it is hand picking, by which, although it will shoot again, it will be very much weakened.

Chapter XXIV. shows us "how to grow good corn," this term being applied to the four cereal grasses—wheat, barley, oats, and rye—with observations on their origin, cultivation, diseases, enemies, &c. The next chapter refers to the "popular belief that wheat, in a fit state for the food of man, was an original gift of God, and handed down to him unaltered in form or character, except in so far as relates to 'varieties' produced by soil, climate, &c." In opposition to this theory, Dr. Buckman calls attention to the experiment of M. Esprit Fabre, of Agde, near Bordeaux, who raised wheat from the seeds of the *ægilops ovata*, a grass found in abundance in the South of France and in Sicily. This grass he cultivated carefully eleven years, and at length produced a perfect wheat, similar to the ordinary spring wheat sown in that country. The produce of the experiment was six or eight from one after the most careful treatment under the immediate superintendence of M. Fabre himself.

On the credit of this experiment our author holds what we take to be the very dubious doctrine that wheat is a *derivative plant*, and that this is the case with all our cultivated plants.

The original of the oat plant is probably the wild oat (*avena fatua*), or the bristle-pointed oat (*avena strigosa*), either of which is sufficiently near in appearance to the cultivated kind to justify the conclusion that the latter was derived from it. There is reason, too, to believe that the oat is a much more recent production, as a cultivated plant, than the other cereal grasses. The wild oat is a much taller plant than the cultivated; and it is remarkable that it is seldom met with in uncultivated ground, whilst it abounds in that which is under tillage, amongst other grain crops, from which it is impossible to eradicate it on account of the similarity of the herbage. Our author is led to suspect from this circumstance that the wild oat is a degenerated type of the cultivated, appearing only in fields under tillage. It is

one of the most prolific, pernicious, and troublesome weeds the farmer has to contend with, and where it prevails it inflicts serious injury upon the grain crops, besides shedding its seeds in abundance before the grain is ripe.

The origin of barley, like that of wheat, is uncertain, being traceable back to the ages immediately succeeding the patriarchal. Barley harvest is mentioned in the book of Ruth (ch. i. v. 22), 3,178 years from the present time. On the other hand, Professor Lindley is of opinion that barley is derived from the *hordeum distichum*, of which he makes the two-rowed barley the cultivated type: the four and six rowed kinds he considers accidental varieties. The *H. distichum* is found in Mesopotamia in the wild state; but it is a question whether this is not a degenerated type of a former cultivation. The origin of barley therefore, like that of wheat, must still be considered an open question.

Rye (*secale cereale*) is not much cultivated for a grain crop with us, and its origin is a matter of little interest with the British farmer. It is said to be found in a wild state in the Crimea; but we are not aware that any experiments have been instituted upon it. As civilisation advances, this grain gives place to wheat; and with us it is chiefly cultivated near towns for green food either with or without tares.

The vegetable parasites infesting the corn and other crops are thirteen in number:—

1.	<i>Uredo segetum</i>	. . . . .	Smut, or Dust Brand.
2.	" <i>caries</i>	. . . . .	(Tilletia) Bunt.
3.	" <i>rubigo</i>	. . . . .	Red Gum, or Red Robin.
4.	" <i>linearis</i>	. . . . .	} Straw Rust, or Mildew.
5.	<i>Puccinia graminis</i>	
6.	" <i>fabæ</i>	. . . . .	Bean Rust.
7.	<i>Æcidium berberidis</i>	. . . . .	Berberry Rust.
8.	<i>Cladosporum herbarum</i>	. . . . .	Corn-ear Mould.
9.	<i>Botrytis infectans</i>	. . . . .	Potato Mould and Mildew.
10.	<i>Botrytis</i>	. . . . .	Turnip Mildew.
11.	<i>Oidium erysipthoides</i>	. . . . .	} Hop Mildew.
12.	<i>Erysiphe macularis</i>	
13.	<i>Oidium abortifaciens</i>	. . . . .	Ergot of Grasses.

The history of these pests of the farm is given in the work. The dust brand is well known to every agriculturist, and not only lessens the produce of wheat where it prevails, but it renders the whole sample unfit for grinding until thoroughly cleaned, which is a difficult process. Any miller will refuse to purchase smutty wheat, except at several shillings per quarter below the price of clean wheat. The dust is generally dispersed before the wheat is cut, and, insinuating itself into the husk, attaches itself to the hairy end of the grain, where

it becomes fixed by the rain, and is not easily removed. The bunt, or pepper brand, is much less injurious. It will generally pass the threshing without breaking, and is then easily separated from the grain by the modern dressing machines. If broken, however, the powder has a strong foetid smell, and both this and the powder brand are propagated by unwashed seed wheat, and by the straw of smutty wheat converted into manure. The only remedy for both, recommended by our author, is a dressing of the seed wheat with sulphate of copper; but quoting Professor Henslow, he states the opinion of that naturalist to be, that if seed wheat is *perfectly cleaned* the produce will be free from smut. We can confirm this, the plan having been practised successfully for a long time in Norfolk* by some of the farmers; but it is not generally known. A clear stream, or pump water, is all that is required, giving the wheat a dressing of slaked lime afterwards to dry it.

The ear cockle is the produce of a small worm, bred in the grain, which is purple externally and is sometimes mistaken for bunt. All these diseases disappear or are much modified through draining the land and giving proper attention to the seed. In fact, they are much less prevalent now than formerly, and will most probably wholly pass away as the land becomes more perfectly cultivated.

Nos. 3, 4, 5, and 6 are parasitic fungi, the products of stagnant water in the soil, through want of drainage and neglect of weeding. A dressing of salt is useful as a preventative. The berberry rust is a mystery; but before absolutely rejecting what is said of the effect of the neighbourhood of this shrub on the field of wheat, let the reader look into *Marshall's Rural Economy of Norfolk* (vol. ii. pp. 19 and 359), where he will find what perhaps may modify his scepticism. Dr. Buckman is one of the unbelievers; but for ourselves, having witnessed in numerous cases the deleterious influence of the berberry dust on wheat, we cannot doubt, though we are unable to account for, the fact.

Nos. 9, 10, 11, and 12 are mildew in various forms, all parasitic fungi, damaging the quality and reducing the quantity of the produce, whatever it may be. Whether it

* About seventy years ago, a person at Norwich advertised a method of curing smutty wheat, charging one guinea from each person for communicating the secret, with an engagement not to divulge it. The writer's father paid his guinea, and was directed to wash his seed wheat perfectly clean in a running water, powdering it with lime afterwards, merely to dry it. Most of the farmers who paid the guinea believed themselves hoaxed, but trials of the method proved it a complete success.

attacks the hop, the vine, or the potato, the author recommends sulphur as a specific remedy. The *botrytis infectans* of the potato is, like other epidemics, sudden in its advent, inscrutable in its origin, and fitful in its attacks. That the disease is atmospheric we have good reason to believe; but the peculiar state of the air that engenders it, is still, after twenty years of observation, a mystery. The application of sulphur is worth a trial, but we have never known a case of its being so employed on the potato.

The various insects affecting the corn crop are treated of in Chapter XXIX., the most mischievous only being enumerated. These are eight in number—namely, the slug, the wire-worm, the saw-fly, the wheat midge, the aphid flea, the ear cockle, or corn moth, the corn weevil, the little grain moth, and the meal-worm beetle. These, succeeding each other in the order now stated, attack the corn in its various stages of growth and use from its first germination to its conversion into flour. And when we consider the amazing reproductive powers of all these pests and the utter inability of the husbandman, with all his care, to keep them under,* it is enough to excite astonishment that any crop can escape. Fortunately, nature herself has provided a remedy in the shape of rooks and a vast number of small birds, which, if allowed to live, will feed upon them at all seasons of the year, except a few weeks at seed time and harvest, the only times when they require looking after. As to "killing off" the birds, that has been tried, both with rooks and sparrows, and the wisecracks who did so were afterwards glad to purchase new stocks of them. Hear what a modern writer says of rooks:—

"In the neighbourhood of my native place" (in Yorkshire), says Mr. T. Clithero, "is a rookery belonging to W. Vavasour, Esq., of Weston on Wharfedale, in which it is estimated that there are 10,000 rooks; that one pound of food per week is a very moderate allowance for each bird; and that nine-tenths of their food consists of worms, and insects, and their larvæ; for, although they do considerable damage for a few weeks in seed time and a few weeks in harvest, particularly in backward seasons, yet a very large proportion of their food even at those seasons consists of worms and insects, which, if we except a few acorns and walnuts in autumn, compose at all other times the whole of their subsistence. Here, then, if my data be

* Many years ago, a friend of the writer, finding a small field of beans smothered with *aphides*, constructed a bag as long as the width of the ridges, and having fastened this at the upper edge to a long pole it was held open below and drawn over the tops of the beans. In the course of a few hours two men bagged twelve bushels of the insects. These were given to the pigs, who devoured them greedily.

correct, there is the enormous quantity of 468,000 lbs., or 209 tons, of worms, insects, and their larvæ destroyed by the rooks of a single rookery in one year! By every one who knows how very destructive to vegetation are the larvæ of the insect tribes, as well as worms, fed upon by rooks, some slight idea may be formed of the devastation which rooks are the means of preventing."—P. 196.

Almost all the tribes of birds, from the rook to the tomtit, prey upon insects, especially when feeding their young, which live upon them for weeks after they are hatched. The folly, therefore, of instituting sparrow and rook clubs, which pay for their destruction, is manifest. Many of the supporters of them have discovered their error, and, in some instances, have been obliged to import rooks and other birds to stock their farms with.

There are two species of slugs that destroy the crops—the milky slug (*limax agrestis*) and the black slug (*L. ater*). "The best remedy will be found in encouraging insectivorous birds—the lark, rook, starling, peewit, and others, eating them either in the egg or young state with great avidity" (p. 198). The wireworm is the produce of a beetle of the genus *elater*, commonly called the click-and-hammer beetle, from the sound it utters when cast on its back. Curtis enumerates nearly seventy species of the click beetle, but the most common are the *elater lineatus*, *E. obscurus*, and *E. ruficaudis*. They are destructive to every kind of crop. Whole fields of wheat are sometimes destroyed by wireworms, which attack the roots first, then, eating their way up the centre of the stem, deprive the plant of all nourishment. Ample tillage and the encouragement of rooks and other birds are the most effective remedies. The saw-fly (*sirex pygmaeus*) and the gout-fly (*chlorops glabra*) lay their eggs below the first knot of the young plant, and produce maggots which eat away the substance of the stem, and so either cause the stem to break down or to produce an infertile ear. The swallow tribes are the best destroyers of this insect. The wheat midge (*cecidomyia tritici*) or Hessian fly is sometimes very destructive, but, like some other insects, its attacks are partial and at intervals of years. It has long been very destructive in America, where it is said to have been introduced by the Hessian troops employed in the War of Independence. The larvæ are of the colour of the red rust, for which they are frequently mistaken. In the years 1859, 1860, and 1861, it was prevalent in many parts of England and Scotland, especially in the counties of Suffolk, Sussex, and Gloucester. Curtis recommends burning the wheat stubble as a preventive of their spreading; but we

can offer no remedy for its attacks except feeding down the young wheat with sheep.

The aphid flea (*aphis granaria*) is found chiefly on the green ears of wheat in very warm seasons. It draws off all the sap from the grain, which becomes shrivelled and worthless. Early sowing is the best preventive, as then the grain would ripen before the aphid makes its appearance. The ear-cockle (*tritici*) must be of animal origin. The grain is purple externally, but contains a substance like cotton wool; and if a minute portion of this is taken on the point of a pin and examined with a microscope, it is found to consist of a multitude of minute infusorial worms having the appearance of eels. The smallest portion of the cottony substance, when diluted with a drop or two of water, exhibits thousands of these little creatures under a powerful instrument. Damp seasons and want of drainage favour the production of the aphid flea. The corn-moth (probably *butalis corealella*) produces a small, somewhat hairy maggot, which eats the flour out of the grain. It was very prevalent in 1841, and greatly reduced the yield of the wheat crop. The granary weevil (*calandra granaria*) is a small beetle, which destroys the wheat in granary. The female lays an egg in a hole in the grain, which hatches there and eats away the inside; then it passes into the pupa state, and into that of the beetle, which last completes the work of mischief begun by the larva. The grain moth (*tinia granella*) when in the grub state forms a web round and between several grains of wheat, from which it devours the inside, like the weevil. The meal-worm beetle (*tenebrio molitor*) and the *T. obscurus*—the last, an American production—are two forms of beetles producing the meal-worms found in flour bins. Cleanliness, light, and air, are the best preservatives from these insects, which, when in any quantity, are dangerous to health if made up into bread with the flour.

Science in the cultivation of corn crops occupies Chapter XXX., which includes these sections:—1st. On the uses of special manures for corn crops; 2nd. On the quantity and quality of corn to be used for seed; 3rd. On the period of harvesting corn.

Dr. Buckman deprecates manuring for wheat as a “shifting crop” or in alternate husbandry; and we believe the practice is generally abandoned by the best farmers, except by a top dressing if the plant exhibits weakness in the spring, when a mixture of soot and guano should be applied, rolling the field afterwards. When wheat is sown for several consecutive

years, manure is recommended as indispensable to sustain fertility. Yet Mr. Smith, of Lois Weedon, in Northamptonshire, has sown his land in alternate slips of wheat and fallow, thus planting only half the ground in the season, for thirteen or fourteen years consecutively, without manure and without any diminution of fertility; reaping, too, from the half-sown land, thirty-four bushels per acre on the average. Our author is an advocate for employing *good seed*, except in the case of foreign barley, the thinness of which is of no consequence. But he is *not* an advocate for *thin sowing*, and confines its success to garden culture. If he would visit Mr. Hallett's farm at Brighton, he would there find that thin sowing (one peck per acre) has been *successfully* practised for many years on an extended scale. Experiments respecting the germination of wheat and barley, with the results, are given in the work, and, as might be expected, prove that a variable per-centage of corn does not vegetate. In thin seeding, therefore, it is doubly necessary to select the finest grain for the purpose. Dr. Buckman, however, admits that half the maximum quantity, or two bushels of wheat, is sufficient for seeding the acre; and we think so, too, knowing that this gives sixty-four seeds to the square foot! How they all find room to germinate is another question.*

Experiments are recorded in Dr. Buckman's work, similar to those made in the case of turnip seed, to test the germinating power of the seed. These showed a loss of from 92 to 0 per cent., the large number being Tasmanian, and the smaller, a sample from Hainault Farm, we presume, at Windsor. The foreign wheats exhibit great variety in this respect: some of them germinating freely, others having a large proportion of abortive grains. Thus, while one sample of Tasmanian had 92 and another 54 abortive grains per cent., three samples from Victoria had respectively 6, 10, and 22 per cent. A sample of Russian wheat had 68 per cent. abortives. The experiments on barley showed an

* The following calculation, from "Stephen's Book of the Farm," will show the waste of seed-corn in a strong light:—

"Wheat of 63 lbs. per bushel gives 87 seeds to the drachm, or 1,403,136 to the bushel, avoirdupois. Three bushels, therefore, the common seeding per acre, contains 4,209,408 grains. Suppose each grain produces one stem, and each stem one ear, it will produce the same number of ears of 32 grains each. Multiply, therefore, 4,209,408 by 32, it gives 134,701,056 grains. Divide this by 87, and we have 1,548,288 drachms. Divide this again by 256, the number of drachms to the pound, and the product is 6,048 lbs., which, at 63 lbs. per bushel, gives ninety-six bushels to the acre. But the largest crop of wheat is not more than sixty-four bushels, and the ordinary yield thirty-six bushels, so that, in one case one-third and in the other nearly two-thirds, of the seed-corn is wasted."

average loss of only 8 per cent. on 25 samples; the highest being 30, the lowest 0 per cent. of abortive grains.

In harvesting corn, it would evidently be for the advantage of the farmer to let his wheat stand until it is "dead ripe," were it not for the loss sustained by shelling and other casualties. But, for the miller, the sooner it is cut, after the "pulp" is set, the better. The most conclusive way to ascertain the fitness of wheat for reaping is to examine it by pressure. If the grain is firm under the finger and thumb it may be cut at once, though the straw may appear unripe. Wheat dies from the root upwards, so that the sap in the straw ascends to the grain after the root has ceased to afford any; and it will do this in the shock as well as when uncut. Any miller will give more for a sample of early-cut wheat, than for one that has stood until dead-ripe. Barley should stand until quite ripe, as it is not liable to shed the grain like wheat, and, unless rain falls, it is of a better colour, and more profitable to the maltster. Oats, like wheat, will shed the grain if left till quite ripe, and should, therefore, be cut early, though part of them may be quite green.

In Part V. of our author's work, we find instructions how to make good fences. These are divided into dead and live. The first consist of stone walls, posts and rails, and earthen banks, which, being all of simple structure, are summarily disposed of. Live fences are made in different ways and of various materials; but for field enclosures or boundaries, nothing is equal to white-thorn for quickness and regularity of growth and for durability, when taken proper care of in its early stages. For gardens, yew, beech, and hornbeam, are much employed; the first as an evergreen, the second and third as retaining their dead leaves until the spring, when the young live ones succeed them, and thus they afford shelter all the year round. Holly forms an impenetrable fence, but is too slow of growth. Evelyn had a holly fence in his garden at Says Court in Kent, four hundred yards in length, nine feet high, and four feet in thickness. The gardens and hedge were destroyed by Peter the Great,* who hired the mansion during his stay in England, on account of its vicinity to the Chatham Dockyard and Woolwich shipbuilding establishments. The *ulex*, or common furze, makes an impenetrable fence for a sandy soil, on which white thorn will not thrive well. Soak the seeds of the furze, and sow them in the

* Evelyn's words, speaking of this hedge, are:—"In my now ruined gardens at Say's Court (thanks to the Czar of Muscovy"), etc. Dr. Buckman infers from this, that Evelyn thanks the Czar for the hedge and garden.

month of February. When the young plants appear, cover them with branches of furze, to prevent the cattle and sheep from nibbling them. A little manure will be of use in planting all kinds of fences, and drains also should be laid in under the bank on which the plants are set.

All young hedges should be kept perfectly clear from weeds; and as birds will carry the seeds of other shrubby plants and deposit them amongst the white thorn, these, when they appear, should be carefully weeded out. Directions are given in the work for planting the "young quicks," either on a mound raised without a ditch on light soils, and having a post-and-rail fence on either side to protect them from the cattle, or by sinking a ditch and planting "the quicks" on the face of the bank raised from the earth; the whole surmounted with a row of brushwood, set in the bank. The third or fourth year they should be cut down within six inches of the ground; they will then throw out shoots the next spring and summer as high as those cut off, and will soon make a close fence. Single rows of "quicks" are recommended in this work, as more easily kept clean, and growing stronger. Yet a double row makes a closer fence when planted in a zigzag form, and from six to nine inches—according to the soil—from plant to plant. Draining tiles laid in under the centre of the bank or mound, have been found to promote the growth of the "quicks."

Timber trees are, in all cases, a nuisance, both to a fence and to the field; but some landlords are despotic enough, not only to prohibit them from being felled, but to insist on planting more. This is no gain to them, while it is a serious loss to the tenant. On old-enclosed farms, too, there are generally more fences than good farming requires. On one field in the occupation of the author, there were formerly fifteen fenced enclosures, with ragged hedges around them. By levelling these, and raising new straight ones, he gained two acres one rood of ground, or four and a half per cent. addition to his farm.

The "Vermin of the Fences" (Chap. XXXVII.) are very properly headed by the rabbit; for, certainly, there is no creature so destructive, not only to the fence, but to the whole farm. No landlord who encourages the breeding of rabbits is worthy of a good tenant. Stoats, rats, mice, and a whole army of reptiles and insects, are harboured in fences, if they are not well looked after. The evil is greatly heightened by the tenants, on some estates, being prohibited from ploughing within four feet of the ditch, and so from clearing away the

rubbish that gathers upon this space, on account of the game. Those who travel in the country will frequently see hedge-rows occupying from fifteen to five-and-twenty feet, covered with brushwood, affording shelter for every kind of creature destructive of agriculture and ruinous to the farmer.

Dr. Buckman recommends the Glastonbury thorn, in preference, for live fences, as more hardy than other kinds. This plant (*cratægus oxyacantha* — glabrous white thorn) flowers in January. Tradition ascribes it to Joseph of Arimathea, who, when he visited Glastonbury, struck his staff into the ground, where it forthwith grew and flourished, always producing its flowers in January. It is a useful and ornamental shrub. In planting beech or hornbeam, the sets should be crossed "like a series of xxx's, overlapping each other, and set at ten or twelve inches apart; by this means the branches interlace, and a compact fence will be formed" (p. 232).

The weeds of hedgerows comprise everything but the plant intended to form the hedge. And we may dismiss the subject with a single piece of advice to our farming readers:—Take care of your fence the first five or six years, after which it will take care of itself with common looking after. Some farmers allow their young fences to grow several feet high before cutting them. They then acquire straight smooth stems without lateral branches towards the root, and thornless, forming a poor defence against the weather for cattle and sheep. In this case it is better to cut them down within a few inches of the bank, instead of plashing them, as is commonly practised, by which the whole fence, though good enough at first, gets out of order in two or three years, and the stocks being weakened soon decay.

Farm covenants respecting leases, are important matters to a tenant. As all fences are included in the measurement upon which the acreage rent is assessed, the tenant has a right, first, to every inch of ground up to the fence; and, secondly, is bound to keep the hedge itself in good order, both on his own account and that of the estate. The following rules for covenants or leases respecting fences are given in p. 260:—

"1. Fences should not be kept up to a greater extent than is required.

"2. A tenant-at-will should not be expected to plant or take charge of fences.

"3. Bad fences are evils on an estate to both landlord and tenant."
—Chap. XXXIX., p. 259.

Part IV. is devoted to the question of "How to grow good timber." The preparation of the ground requires "trenching, pitting, and ploughing." *Draining* might properly have been added, being now practised in forming new plantations with excellent effects. Stagnant water in the subsoil, as well as on the surface, is very injurious to the young trees in the first years of their growth. Dr. Buckman considers trenching unnecessary; but we know of no kind of plant, shrub, or vegetable, that will not flourish more in a trenched than in an untrenched soil. Most forest trees (except the *coniferae*) send down a tap-root; and it must be an advantage to a young oak or other tree to be able to do so without obstruction; and the subsoil will get close enough again before the tree requires it.

An interesting account is given of the *cynips*—the insect that produces the gall nut found on the oak, to the great injury of the tree, especially when young. This insect was first discovered by our author in Devonshire in 1853, but it has since spread over the counties of Somerset, Gloucester, Worcester, Sussex, as also into North Wales, &c.

Most of the primeval forests of this country have long disappeared before the march of population, civilisation, and cultivation. The work of "clearing" is still going on, and no adequate compensation is made by fresh plantations. The consequence of this is, that our rivers and streams have greatly decreased in water-power; and in many parts of the country that have become bare of trees, the springs have either totally failed, or been much reduced in their supply of water. It would be well if the landed proprietors would plant a portion of the ordinary land on their estates—large breadths of which are, in some instances, too poor to pay for cultivation, and when let to tenants with the good land, prove a dead weight upon their hands. The planting of these tracts would have the effect of modifying the atmospheric phenomena, by averting sudden storms, and by superinducing a more regular supply of moisture. In France, the enormous extent to which the Royal Forests have been destroyed since the Revolution of 1789, has had so prejudicial an effect upon the land, that the Government has taken the matter up, and by planting very extensive tracts, has restored fertility to land that was quite barren for want of rain.

The chestnut and walnut are less common than formerly; the demand for these trees, particularly the latter, for making gun stocks during the war with Napoleon, and the high price fetched by their timber, while the Continent was shut

against us, inducing those who possessed them to cut them down.* The Spanish chestnut is valuable on account of its fruit, which forms a considerable article of food in France and Spain. In the mountainous parts of these countries the working classes subsist upon it a great part of the year, and it is found to be a most nutritious article of diet. The timber of the Spanish chestnut is valuable, but is not used so much in building as it was formerly, the Norway fir having superseded both it and the oak, as being cheaper, more easily worked, and quite durable enough for the majority of house builders. The roof of Westminster Hall, built by William Rufus in 1099, was constructed of Spanish chestnut timber, and is nearly as sound as ever. The fruit of the walnut is a luxury with every class of society; and even the husk of the ripe fruit is used in the kitchens of the great in sauces and flavourings. On the Continent, where it is extensively grown, an excellent oil is extracted from the fruit, quite equal to olive oil. Of the elm there are many varieties in England, but botanists reduce them to two species—*ulmus campestris*, the small-leaved, and *ulmus montana*, the broad-leaved, or wych elm. Both the appearance and the uses of the elm are familiar to almost every Englishman. If allowed to attain its mature height and breadth of boughs, it is a very ornamental as well as useful tree. It is much used in rural carpentry, and also in ship-building for blocks, dead-eyes, &c. The elm requires a good deep soil, and if planted on gravel, soon decays at the heart. We refer our readers to our author's work for an account of the varieties of this timber. The wych elm sometimes grows to a large size, as Maul's Elm at Chelmsford, which is forty feet in circumference, and one at Stroud, Gloucestershire, fifty feet. The latter is hollow, and was once used as a cider mill. The wood of the wych elm is more knotty and gnarled than that of the *U. campestris*; and the large excrescences found on it make beautiful veneer for work-boxes and other cabinet uses.

The ash is a handsome tree when in perfection with its young foliage upon it; but as it acquires this late in the season, so it parts with it early and rapidly, having for a long period nothing but naked arms and branches to display. The ash is injurious when planted in hedgerows of cultivated fields. Its roots spread laterally a long way, and nothing will grow over them; and the drip from the foliage is equally

* "Such was the demand for the walnut, and such its scarcity, that a single tree has been known to sell for 600*l*."—P. 295.

hurtful to vegetation. The timber of the ash is used in a multitude of forms, by the cooper, the wheelwright, the machinist, the coach-maker, &c.

"The beech (*fagus sylvatica*) is a native of Britain. It sometimes attains a gigantic size, and when at its maturity is a beautiful object. The wood is used for cabinet work, turning, and carpentry of various kinds. It makes excellent fire-wood, but furnishes very little ash, as it feeds principally on the atmosphere and water, taking but little from the soil. It will flourish on a rocky sub-soil with a few inches of upper soil, sticking its roots into the fissures of the stone to attain stability. The copper beech (*fagus sylvatica purpurea*) forms a beautiful object in pleasure grounds and plantations near a mansion."—P. 311.

The soft-wood trees are the sycamore, plane, lime, horse-chestnut, willow, poplar, the pine in all its varieties, the yew, cedar, &c. We cannot go into the history of these, a brief account of which is given in Chapter XLVI.

"Orchards" are the topic of a later portion of Dr. Buckman's book; the apple and pear being the trees to which he limits his observations. Apples are classified as *culinary apples*, or those used for tarts, puddings, &c.; *dessert apples*, usually of a sweet sub-acid flavour, and crisp texture, which are eaten raw; and *cider apples*, the expressed juice of which forms English cider. The same distinctions will hold of the pear, with the difference that pear juice is termed *perry* (p. 321). With respect to the quality of the fruit, our author is of opinion that the goodness of cider, and therefore of the apples, is mainly determined by the nature of the soil. It is a remarkable fact, that in the Vale of Gloucester the apple flourishes until it reaches the lias of which the subsoil is composed, where it suddenly falls off. The same effect appears on the sides of the Cotteswold Hills, when the roots reach the oolite which prevails there in the subsoil.

"No sooner does a Vale farmer become possessed of sufficient capital than he moves to the hills; and, as in his former residence, he had imbibed a love of cider, his first act would be to plant an orchard at his new home. But, alas! the most successful farmer cannot command crops in an uncongenial soil; and so it is not surprising that we should know of instances where not even enough fruit for an annual apple-pudding has been produced from a Cotteswold orchard which had been planted for thirty years."—P. 324.

A useful account of the whole management of an orchard, with a list of the most valuable varieties of the apple and pear, and of the several soils adapted to their growth, will be

found in the volume in Chap. LI. The farmer's practice of plying the labourer with cider to urge him on in his work is strongly condemned, as the fruitful cause of drunkenness, and of every vice and crime. A comparison is drawn between the peasantry of the cider-drinking and the non-cider-drinking counties, greatly in favour of the latter, both morally and physically.

"On one melancholy occasion it was indeed sad to hear the coroner, among other remarks, observe that full four-fifths of the inquests in a cider county were the effects of drink." Again,—“We conclude, as the result of experience, that each sack of corn that finds its way to market from a cider county costs 1s. (or 3d. per bushel) in drink, which, though it is produced on the farm, might yet have been sold to produce that amount. Would it not, then, be better to sell such farm produce, and by giving extra money instead of drink to the labourers, and so by allowing them the option of taking less drink but more meat, gradually withdraw them from the temptation to get drunk which besets them under the present system? For while we feel quite sure that the morbid craving for the public house has commenced with drinking on the farm, we may be certain that if, by any means, we can check this system, it will ultimately be a great gain to both master and man.”—Pp. 354, 355.

On the whole, we recommend Dr. Buckman's volume to the agriculturist as affording useful information on many subjects not commonly entered upon by writers on husbandry. The speculative points on which we may be at issue with the author, are open questions. On the other hand, we have found much that is instructive and interesting, conveyed in a clear and familiar style of composition, and the illustrations are correct and artistic.

The subjects of the six lectures contained in M. Ville's work are:—1. The science of vegetable production; 2. The assimilation of carbon, hydrogen, and oxygen by plants; 3. The mechanical and assimilable elements of the soil; 4. The analysis of the soil by systematic experiments on cultivation; 5. The sources of the agents of vegetable production; 6. The substitution of chemical fertilisers for farmyard manure.

In the first of these, after enumerating the organic and mineral substances (four of the first, and nine of the second) in plants, the author endeavours to prove that there is a connecting link uniting the mineral with the vegetable kingdom, similar to that which has been established between the animal and the vegetable. After referring to the varied combinations of the elements composing plants, and comparing them to the letters of the alphabet, which, though few in

number, admit of almost infinite combinations, he goes on to say:—

“Now, if it be so, we are justified in likening the vegetable to a mineral combination, a more complicated one, doubtless, but which we may hope to reproduce in every part by means of its elements, as we do with the mineral species. This proposition, how astonishing so ever it may appear to you, is, nevertheless, the exact truth. To prove it to you, permit me to establish a parallel between vegetables and minerals, from the different points of view which more especially characterise the latter. We will commence with their mode of formation and growth.

“First, we perceive only differences. A crystal suspended in a saline solution, grows by the deposit of molecules on its surface, similar in composition and form to those which constitute its nucleus. These molecules, diffused throughout the solution, obey the laws of molecular attraction, and thus increase the mass of the primitive crystal. The vegetable, on the contrary, does not find diffused vegetable matter in the atmosphere, nor in the soil in which it is in contact. Through its leaves and roots it derives its first elements from without, causing them to penetrate into its interior, and there mysteriously elaborates them, to make them ultimately assume the form under which they present themselves to our eyes.

“We can, nevertheless, say that the process of vegetable production has something in common with the formation of a mineral. For in both cases, we see a centre of attraction which gathers up the molecules, &c., received from without. In the more simple case of the mineral, the combination of the elements is previously accomplished; only a mechanical grouping takes place. In the more complex case of the vegetable, the combination and mechanical grouping are effected at the same time, and in the very substance of the plant. In both cases a formation is engendered by the union of definite or definable material.”—P. 4.

This comparison is ingenious, but by no means satisfactory. To establish his theory, however, M. Ville proposes the following experiment:—

“Take two seeds of the same sort, having the same weight; remove from each of these seeds a morsel, also of the same weight, only, let one include the embryo in the computation, and in the other let the embryo be left out, and take instead a fragment of the perisperm. Then put both upon a wetted sponge. The seed without the embryo will soon enter into a state of putrefaction; the other, on the contrary, will give birth to a vegetable capable of absorbing and organising all the products resulting from the disorganisation of the first.”—P. 7.

The power by which this is effected he calls “a new power of organic essence, which modifies the ordinary course of

affinities." But surely this is a misnomer. It is not a *new*, but an *inherent*, though dormant, power in the seed; a vital power resulting from a *living* principle, totally different from the power of molecular attraction of affinity which exists between the inert matter of the mineral and the contents of the saline solution in which it is immersed. M. Ville proceeds:—

"This conclusion will acquire stronger and stronger evidence, as we penetrate deeper in our researches, and I shall at once give a striking confirmation of it in showing you that nature does not pass suddenly from the mineral to the vegetable, from crude matter to organised matter, but that there exists on the contrary a class of compounds which lead insensibly from the one to the other, and form the bridge which unites these two series of productions. These compounds, which, for this reason, we call *transitory products of organic activity*, range themselves in two different groups, hydrates of carbon and albumenoids. The following is an enumeration of them:—

TRANSITORY PRODUCTS OF ORGANIC ACTIVITY.

	<i>Hydrates of Carbon.</i>	<i>Albumenoids.</i>
Insoluble . . .	{ Cellulose	Fibrine.
	{ Starch	
Semi-soluble . . .	{ Gum Tragacanth . . .	Caseine.
	{ Mucilages	
	{ Protine	
Soluble . . .	{ Gum Arabic	Albumen."
	{ Dextrine	
	{ Sugars	

An elaborate argument is then employed to show, that because these elements form a complete series, and can all be resolved by chemical action and heat into the same substance—grape sugar—which is, or seems to be, the least organised form, the nearest to mineral nature which the type can assume, and because, further, each member of the series contains the same elements of carbon united with water, it follows that the theory of a connecting link between the mineral and the vegetable is satisfactorily made out. Such, at least, appears to us to be the drift of M. Ville's argument and the conclusion to which he carries it.

Before this doctrine of our author can be granted, he must show that there exists in the mineral something at least analogous to the vital power possessed by the plant, which, when it comes in contact with light, heat, and moisture, is called into active operation. A modern writer gives a much more definite explanation of the relationship between the three kingdoms of nature.

"The vegetable kingdom," he says, "is placed in nature intermediate between the mineral kingdom, which is submitted solely to the operation of physical laws, and actuated only by means of mechanical forces, and the animal kingdom, in which vital organisation is most complex and most perfect, and where physical and chemical affinities are subordinate in energy to the refined influence of nervous power. Everything in nature is referrible to one or other of these three divisions, of which the first, the mineral, is distinguished by an absolute fixity of constitution, whilst the materials of which the animal (and vegetable) is composed, are in a constant state of change. If we consider a piece of marble, it contains carbon, oxygen, and calcium, and as long as it has been a piece of marble the same portions of these elements have formed it. But if we consider an animal, it is composed of numerous elements, which have little permanence of arrangement. By the very act of its living forces, the materials of which it consists die, and are thrown off from the remainder, and other new elements of the same kind must be taken in their place, or else the whole animal dies."—*Kane's Industrial Resources of Ireland*, p. 246.

This passage applies as well to the relationship between the vegetable and the mineral as to that of the vegetable and the animal. Although the vegetable possesses a less refined organisation than the animal, it is, by the vital principle, completely separated from the mineral in material relationship. The vegetable constantly receives fresh accessions of the materials of which it is composed, until it reaches the maximum of maturity of which it is capable; but the mineral remains for ever a congeries of the same simple inert material of which it was at first composed. It neither receives increase, moves, nor lives in any way whatever; and in relation to the vegetable, it is merely the medium of its growth, as supplying a small portion of its nourishment, no other possible analogy existing between them. The vegetable assimilates portions of the minerals, as elementary food, by which it is *itself* prepared to pass to the animal as food; for "in no case," says the same authority, "is an animal able to assimilate to its organism, or use as nutritious food, a mineral material." (*Ibid.*)

M. Ville's second lecture relates to the organic elements of vegetables, namely:—Carbon, hydrogen, oxygen, and nitrogen. Carbon is absorbed by the leaves from the atmosphere, and by the roots from the soil under the form of carbonic acid. It is under the influence of the sun's rays that the leaves receive it; hence their green colour. And when the sun withdraws his rays, the carbon is given out and is replaced

by oxygen. A certain temperature of the atmosphere is necessary for the carbon to produce its effect upon the leaves of a plant, the flowers of which do not absorb it. The presence of oxygen is necessary to the action of carbon. The supply of this material in the atmosphere is unlimited; and, in proportion as vegetation absorbs it, animal respiration restores it in equivalent quantities. Carbon forms about fifty per cent. of dried plants; but in living ones, the fixed quantity depends upon the extent of their foliage.

The oxygen and hydrogen in plants are derived from water, which is assimilated in its normal state. There is, therefore, an abundant supply of them wherever water is found. It is otherwise with nitrogen—which, though indispensable to the welfare of plants, is found only in small quantities in their composition. It is supplied, however, from the atmosphere and the soil, as well as from manures—a fact abundantly proved by Boussingault. Indeed, the circumstance of the air containing seventy-nine per cent. of nitrogen, will account for it. The difficulty which chemists have met with in their attempts to form combinations with nitrogen gas, led them, at first, to deny this; but further and nicer experiments have caused them to alter their opinion. Boussingault found that in a five years' rotation of potatoes, wheat, clover, turnips, and oats, there was an annual excess of nitrogen per acre of only 8.36 lbs.; in the culture of artichokes, 37.84; and in that of lucerne of 182.06 lbs. It has been attempted to prove that this excess is derived from the ammonia in the air; but as it has been shown that the soil receives only three pounds of nitrogen per acre per annum, this source is quite inadequate to account for the excess of 182 lbs. in the case of the lucerne.

"But it is urged there may exist in the atmosphere some nitrogenous substance assimilable, which is condensed by rain-water, and which has hitherto escaped analysis. Notwithstanding the utter vagueness of this objection, I have wished to reply to it by direct experiment. I have instituted two similar growths in boxes placed under shelter; one of these was watered with rain-water, collected by a pluviometer of equal surface to that of the box, and placed apart; the other received similar quantities of perfectly pure distilled water. The crop with distilled water was nearly as large as that obtained with rain-water. It is, therefore, evident that rain-water contained nothing susceptible of influencing the development of vegetables."—P. 26.

This is quite a new doctrine in the annals of agricultural chemistry. It has always been believed that rain-water,

independent of its normal elements—oxygen and hydrogen—supplied the plants with nitrogen in the form of ammonia, in quantities equal at least to what they contain. Our author asserts that this is absorbed *naturally* by the plants without the intervention of rain, or the intermediation of nitrification previously accomplished in the soil. And while he admits that in certain cases, important quantities of nitrates may be produced in the soil, he still asserts that this cannot account for the excess of nitrogen in the crops.

“For the 182 pounds to have penetrated into the lucerne by this channel, it would have been necessary to engage 1,756 pounds of nitric acid, which, itself, to be saturated, must have combined with 1,540 pounds of bases. Those 1,540 pounds of bases should be found in the crops; but the latter produced upon combustion only 1,525 pounds of ashes, of which the bases formed 701 pounds. There is then at least half the excess that the hypothesis of nitrification cannot explain.”—P. 28.

We will not follow M. Ville any further in this argument—the experiments in support of which are described in the work—but content ourselves with quoting the summary in the following conclusions:—

“1. That, generally speaking, the nitrogen of the air enters into the nutrition of plants.

“2. In connection with certain crops, especially vegetables, this intervention is sufficient, and the agriculturist has no occasion to introduce nitrogen into the soil.

“3. With regard to the cereals, and particularly during their early growth, atmospheric nitrogen is insufficient, and to obtain abundant crops it is necessary to add nitrogenous matters to the soil. Those which best fulfil this object are the nitrates and ammoniacal salts.”—P. 31.

Lecture III., “On the assimilation of minerals by plants,” goes to prove, that it is in a liquefied state only that this can take place, through the agency of the roots and the medium of the soil. The soil is made up of three constituents—*humus*, *clay*, and *sand*. The first is of organic origin, and is known under the name of “vegetable earth,” and its nature is thus described by Sir R. Kane:—

“After the death of a plant, its elements, yielding to the force of their chemical affinities, enter into new arrangements, and by a series of progressive alterations are finally converted into a dark brown material, termed popularly ‘vegetable mould,’ and by chemists *humus*

or *ulmine*. When pure it contains no nitrogen, and consists of, as prepared—

	FROM WOOD.	FROM SUGAR.
Carbon	72.7	65.65
Hydrogen	6.1	4.28
Oxygen	21.2	30.07
	<hr/> 100.0	<hr/> 100.00

"This substance, in itself, is powerless on vegetation; but as it absorbs water, it assists in maintaining the temperature of the soil. If it absorbs ammonia, it retains it very feebly, for water, in quantity, will withdraw it. When moist it undergoes combustion in the open air, and thus constitutes a source of carbonic acid, which assists in dissolving the mineral elements in the soil."

Clay, in itself, is equally inoperative on vegetation; but it imparts consistency to a light soil, retains moisture, and fixes ammonia and all saline solutions by capillary affinity, and thus acts as—

"A granary which, out of its abundance, stores up superfluous aliments to distribute them again when scarcity prevails. . . . By its agency the soluble salts resist flowing waters; still more it removes from highly charged saline solutions a much larger quantity of salts, and yields them up again to the water, when it arrives in sufficient quantities. In a very fertile soil, that is to say, in one much charged with soluble salts, when little water is present, the solution it produces might attain to such a degree of concentration as to become injurious to plants."—P. 38.

Sand—

"Forms part of all soil, of which it is the essential constituent. It communicates to the soil its principal physical properties and its permeability to air and water. It tempers the properties of the clay, and by its association with it, realises the condition most favourable to the development of plants."—P. 39.

Passing by those elements which abound in all soils, such as silica, magnesia, iron, manganese, chlorine, and sulphuric acid, our author considers phosphate of lime, potash, and lime as—

"The essential minerals, such as, associated with a nitrogenous substance, and added to any kind of soil, suffice to render it fertile. With them we can actually fabricate plants."—P. 40.

In accordance with this idea M. Ville instituted a series of experiments. He placed in pots of china biscuit—

- "1. Calcined sand alone.
- "2. Calcined sand with the addition of a nitrogenous substance.
- "3. Calcined sand with minerals only (phosphate of lime, potassa, and lime).
- "4. Calcined sand with the minerals and a nitrogenous substance."

In each pot he sowed on the same day twenty grains of wheat of the same kind and weight, keeping the soil moist with distilled water during the period of vegetation. The results were as follows:—

"In the sand alone the plant was feeble, and the dried crop weighed only 93 grains.

"In the nitrogenous substance alone, the crop, still very poor, was, however, better; it rose to 140 grains.

"In the minerals alone it was a little inferior to the preceding; it weighed 123 grains.

"But with the addition of the minerals and the nitrogenous substance, it rose to 370 grains."

From the decisive results of these experiments he concludes that each of the agents of vegetable production fulfils a double function:—

"1. An individual function variable according to its nature; since the nitrogenous matter produced more effect than the minerals, and as either, employed separately, raises the yield above what the seed produced in the pure sand.

"2. A function of union; since the combined effects of the nitrogenous substance and the minerals, is very superior to what each of these two agents produced separately."—P. 41.

These experiments and their results are both interesting and important, proving as they do the beneficial effects of the combined action of the most important, but least abundant elements of production. Not satisfied, however, with these, M. Ville made further experiments. In the first instance he left out the phosphate of lime, retaining the nitrogenous matter and the potash and lime. The result was, that the seed germinated; but when about four inches in height the plants withered and died. The next experiment was with phosphate of lime, and lime with nitrogenous matter, leaving out the potash. The plants in this case did not die, but the yield was only 123 grains. Potash, therefore, is an essential element only inferior in value to phosphate of lime. In the third experiment, the lime was left out, the other elements being retained, and the result was 840 grains of produce

against 370, when the lime was added. The fourth mixture therefore M. Ville calls "*the complete manure.*"

But although, according to these experiments, lime plays only a secondary part in vegetation, that part is still important; for it has been proved that a soil destitute of lime will not produce a crop of wheat. It is well known to scientific gentlemen in Ireland, that the great limestone plain, which occupies the centre of that country, has not a particle of lime on the surface soil; and that without liming, a crop of wheat cannot be raised there. Such is the land in Tipperary and West Meath, where, before the famine, a yield of twenty barrels,* or ninety-three bushels per Irish acre, was obtained. But after that period, the farmers being too poor to procure lime, the produce fell off to from five to eight barrels, nor did it recover its fertility until lime was again applied.

Another experiment was made by M. Ville with a mixture of sand and humus, excluding the lime, but retaining the phosphate and potash. The result was a yield of 340 grains, which proves that humus without lime is inactive. But when the lime in a carbonate state was added, it rose at once to 493 grains, showing that "between lime and humus, there is a relation of unity;" that, in point of fact, lime is necessary to bring out the fertilising properties of the humus.

Lecture IV. treats of the analysis of the soil by cultivation with "systematic experiments." A variety of these are given in the work, which we shall refer to as exhibiting, on a considerable scale, the effects of special manures and their absence. Those materials in a soil that do not act upon vegetable production, except as a support to roots, are termed "*mechanical agents*;" those which, at a given moment, penetrate the plants in the form of aqueous solutions, are called "*assimilable agents*;" and all organic and mineral débris, which contain useful elements, such as they yield up to water unless previously decomposed, are called "*assimilable agents in reserve.*" These three kinds of elements are classified by our author in the following manner:—

COMPOSITION OF A FERTILE SOIL.

- | | |
|--------------------------------|-----------------------------|
| 1. Mechanical Agents | { Sand.
Clay.
Gravel. |
|--------------------------------|-----------------------------|

* The barrel of wheat in Ireland is 20 stones of 14 lbs. each. The Irish acre contains 212 rods to the English 160.

2. Active Assimilable Agents . . .	Organic	{ Humus. Nitrates. Ammoniacal Salts. Potassa. Soda. Lime. Magnesia.
	Mineral	{ Soluble Silica. Sulphuric Acid. Phosphoric Acid. Chlorine. Oxide of Iron. Oxide of Manganese.
3. Assimilable Agents in Reserve . . .	{ Undecomposed Organic Matters.	
	{ Undecomposed Fragments of Rocks.	

M. Ville then endeavours to show that modern chemistry has failed in analytical experiments on soils, for want of attending to such a classification; and that Davy, with all his acuteness, only proved dissimilarities in all the soils which he examined. He then proposes the three questions most important to agriculturists, namely:—

1. How much wheat will a certain soil produce?
2. What will be the best manure for it?
3. How long will its effects continue?

He then proceeds to prove, that while the principal elements of fertility are potash, phosphoric acid, lime, and nitrogen, the mere presence of these in a soil is not sufficient to secure fertility, unless they exist there in an assimilable form, or one in which the matter in the soil will dissolve them. All these agents, for instance, are present in a felspathic sand; but the soil would, notwithstanding, be perfectly barren, because those elements are combined with silicates which will not dissolve in water. Experiments upon the soil at Vincennes are given, in which, although the soil yielded to water little potash and no phosphates, three successive crops of wheat extracted 188 pounds of phosphoric acid and 2,086 pounds of potash per acre. He proceeds to show that the new method rests upon the following facts proved by his experiments, namely:—

1. That the association of minerals and all assimilable nitrogenous matters, produces good crops everywhere, while, isolated, these agents are always inert.
2. That lime produces a useful effect only in presence of humus.
3. That lime and humus produce great effects only in a soil provided with mineral and nitrogenous matters.

“This method (system?) adapts itself to all the wants of cultivation, since it is sufficient to scatter a few handfuls of a fertilizing

manure upon a field, to indicate at the time of harvest what the soil contains, what it wants, and, consequently, what must be added to it to make it fertile."—P. 59.

Then follow experiments on three different soils, compared with one on calcined sand, the results being as follows :—

	1	2	3	4	5	6	7
	Without Manure.	Complete Manure.	Without Nitrogenous Matter.	Without Phosphate of Lime.	Without Potash.	Without Lime.	Without Humus.
Calcined Sand.	6	24	8	0	7	22	33
Soil from Gascony.	5.5	32	9	6	8	22	...
Soil from Britagne.	4	29	16	9	18	0	...
Soil from Vincennes.	11	35	30	28	33	33	...

These experiments were made upon a small scale ; but it is shown that the result is nearly the same upon a large one.

CULTIVATION OF WHEAT CROP PER ACRE.

Years.	Complete Manure.	COMPLETE MANURE.			
		Without Nitrogenous Matters.	Without Minerals.	Without Potash.	Without Phosphates.
	lbs.	lbs.	lbs.	lbs.	lbs.
1861 Straw .	9,100 } 14,380	6,644 } 14,380	7,150 } 12,650	9,966 } 14,960	11,002 } 14,382
1861 Grain .	5,280	4,686	5,500	4,994	5,280
1862 Straw .	8,646 } 12,830	7,226 } 10,660	7,942 } 11,310	8,866 } 13,002	9,966 } 14,966
1862 Grain .	4,180	8,334	3,378	4,136	4,940
1863 Straw .	15,370 } 22,520	6,666 } 9,497	10,648 } 14,908	11,530 } 16,554	12,310 } 14,566
1863 Grain .	8,250	2,831	4,160	5,034	4,356
Average .	16,906	10,568	12,592	14,339	15,634

From all this we gather that the soil is the best exponent of its own composition by the amount of its produce ; and this is the gist of the author's reasoning ; which shows, likewise, that vegetation furnishes the best analysis of the soil. The results of the culture on the large and the small scale agree sufficiently to prove the correctness of the theory laid down, as the following summary shows :—

	COMPLETE MANURE.			
	Complete Manure.	Without Nitrogenous Matter.	Without Potassa.	Without Phosphates.
Cultivation on a Small Scale.	35	20	28	28
Cultivation on a Large Scale.	35	21·7	30	32

M. Ville's fifth lecture treats on the sources of the agents of vegetable production; and it opens with a comparison between what the writer terms "an ideal manure," or a manure *par excellence*, and the common farmyard manure. The former comprises all the *active assimilable agents* enumerated on page 318, the presence of which constitutes a fertile soil, as is proved by the produce from the calcined sand, when mixed with the complete manure.

Of the constituents enumerated, some are found in almost every soil, as iron and manganese; which, also, are assimilated in very small quantities. Of others, the mode of action is imperfectly understood—as soda, magnesia, sulphuric acid, and chlorine. All these, therefore, are excluded from the "practical manure," which reduces the essential agents to the four enumerated before—namely, nitrogenous matters, potassas, lime, and phosphates. The sources of all these agents, their commercial value, and the quantity required to be applied, with the mode of application, are given in detail in the work. Reference is, of course, made to guano; the introduction of which, proved that a substitute might be found for farmyard manure. With respect to the origin of guano, M. Ville's opinion is, that it is not exclusively the product of the excrement of sea-birds, but that it contains also a large quantity of the ashes and skeletons of the birds themselves, as is proved by the large proportion of phosphoric acid which it holds. He considers, that to form a perfect manure, guano requires the addition of potash and lime. Does M. Ville imply by this, that guano does not contain lime or potash, or that it contains them in insufficient quantities? Nesbit, who studied guano as thoroughly as any man, says:—"The chief mineral constituents of plants—lime, magnesia, potash, soda, chlorine, sulphuric acid, and phosphoric acid (the latter most important)—are found in guano." M. Ville gives an interesting account (though short) of the extraction of potash from the water in which the fleeces of sheep's wool

are washed before dyeing; from the waste-water of sea-salt; and from felspathic rock. These discoveries will probably, in time, reduce the price of this important agent of fertilisation, it being now £51 per ton. The following table exhibits a classification of the elements of production, and their relative order in the construction of manure:—

		IDEAL MANURE.	PRACTICAL MANURE.
Active Assimilable Agents	Organic .	Humus	
		Nitrates	
		Ammoniacal Salts	Nitrogenous Matter.
		Potassa	Potassa.
		Soda	
	Mineral .	Lime	Lime.
		Magnesia	
		Soluble Silica	
		Sulphuric Acid	
		Phosphoric Acid	Phosphates.
		Chlorine	
		Oxide of Iron	
		Oxide of Manganese	

The distinction here observed, between what our author terms an ideal and a practical manure, may be thus explained. All the elements of fertility enumerated in the table being assimilable, enter into the composition of plants, and are found there upon analysis; but experiments prove also, that without nitrogen, potash, lime and phosphates, no crop of grain can be obtained, or, at most, a very small one; whilst the addition of these four elements at once multiplies the produce in a quadruple proportion, or even more, as in the cases of the soil from Gascony and Bretagne, in which it increased six-fold. M. Ville, therefore, terms them "practical manures," because without them, in some proportion or other, good crops cannot be obtained.

Speaking of the beet sugar manufacture of France, he refers to the production of potassa from the residue of the beet; as well also in the distilleries as in the sugar manufacture. He shows that the sale of this article off the land without adding an equivalent—a method which would neutralise the profits—has had the effect of reducing the proportion of saccharine matter in the beet root in the neighbourhood of Lille to five or six per cent.; and he warns the manufacturers, that, unless they supply an equal quantity to the soil with that abstracted from it, the manufacture must soon cease.

At present, three of the four substances enumerated, are obtainable only at a great price; but it is probable that they will eventually be reduced in value by the discoveries that are daily made by the aid of chemistry. Thus, phosphate of lime

is found in abundance (fifty per cent.) in the *nodules* of chalk; and still more so in *apatite*, a crystallised mineral, of which there are entire mountains in Spain, and from which the phosphate of lime is very easily separated. The riches of nature in the elements of production are scarcely more than beginning to be developed; in fact, their true character, and the part which each of them plays in the work of vegetable production, is of itself of recent discovery. Every day is adding to the stock of knowledge bearing upon this subject, and the increasing requirements of mankind as population increases, will stimulate inquiry, and elicit fresh facts, affording the means of a larger and cheaper production of food.

Lecture IV. commences with the following summary of the foregoing arguments:—

"1. That there exist four regulating agents, *par excellence*, in the production of vegetables—nitrogenous matters, phosphate of lime, potassa, and lime.

"2. To preserve to the earth its fertility, we must supply it periodically with these four substances in quantities equal to those removed by the crops."—P. 90.

The writer then shows that farmyard manure, or the dung-hill, must, as the effects of the use of it proves, contains all these ingredients; indeed, analyses, made at the Imperial farm at Vincennes, and at another farm at Bochelbrunn, exhibited them all with no further difference than such as the different composition of the manure would occasion. Experiments on farmyard manure, used on the triennial and the quinquennial systems of husbandry, respectively yielded the following results:—

	TRIENNIAL.	QUINQUENNIAL.
Weight of Dried Crop per Acre	2,455 lbs.	3,131 lbs.
Nitrogen contained in the Crop	25 "	44 "

"With the five years' rotation agriculture has been brought to substitute the exportation of meat for that of cereals, and it has derived decided advantages from the substitution; for the sale of the cereals causes a loss of potassa, phosphoric acid, and nitrogen to the farms, which cannot be compensated for except by a supply of manure, or by irrigation. If, on the contrary, the crops are consumed on the farm by the animals, we find in their excrements almost the whole of the phosphoric acid and potash contained in their food. The quantities that fix themselves in their tissues and bony structures, constitute but a small loss. As to the nitrogen, their respiration rejects about a third of it into the atmosphere in the

gaseous state; the other two-thirds return to the soil in the manure. It follows from this that the raising of cattle results in preserving to the soil almost the whole of the four agents which assure its fertility, and of producing benefits in money without sensibly impoverishing the farm."—P. 97.

This doctrine is contrary to the opinions of some of our most eminent chemists. Referring to this very subject as applied to Ireland, a writer whom we have already quoted, says:—

"The phosphoric acid so abundantly deposited in those parts of plants employed as food, is destined to the formation of the osseous skeleton of the animal, and on its death returns to the soil, to be again absorbed into the composition of plants, and become the material of the bones of a new race of animals. . . . It is to be feared that before very long considerable loss will accrue to the corn and other food crops of this country, from the deprivation of the soil of this essential ingredient. The cattle exported from Ireland carry out in their bones a vast quantity of phosphoric acid derived from the soil. Of the cattle whose flesh is eaten in the country, their bones form a considerable article of export, as the attention of our agriculturists has not yet been awakened generally to the importance of restoring them to the soil. Let it be recollected that in one pound of bones there is the phosphoric acid belonging to 28 pounds of wheat, or of 250 pounds of potatoes; that this phosphoric acid is indispensable to the healthy growth of the plants, and of the animals by which they are consumed, and hence will appear the vital importance to agriculture of preserving to the soil, as far as possible, these valuable materials, and returning them to the land."—*Kane's Industrial Resources of Ireland*, p. 271.

If, then, the above facts are true—and we firmly believe they are—M. Ville is in error in ignoring bone manure as of no importance in the exportation of cattle, and in representing the loss of them as small. There is, in fact, no manure, except guano, which so permanently imparts fertility to the soil for the production of wheat crops as bones, because, by the slowness of their decomposition, they continue for years to give out phosphoric acid.

The author then goes on to show that the cultivation of beet-root for the manufacture of sugar, is still more advantageous than the five course rotation of husbandry, because the sugar extracted is wholly composed of carbon, oxygen, and hydrogen, derived from the water and atmosphere; whilst the pulp, or residue, is consumed by cattle, by which means, nearly the whole of the useful constituents are returned to the soil in the dung. A still more important culture is that of *colza*, or rape seed. The oil extracted

from it, like sugar, is also composed entirely of carbon, oxygen, and hydrogen, so that all the remaining produce, stems and pulp, or cake, are given back to the soil without passing through the animal. This, however, depends upon the grower having a crushing mill to extract the oil on his own premises; otherwise, if he sells the seed, the whole produce is lost to the farm, as in the case of grain. Even when the farmer crushes the seed himself, it is sometimes the practice to sell the cake to the merchant for exportation, which is equally a robbery upon the land, unless the loss is compensated for by the substitution of some other manure of equal value. According to M. Ville, the residue, after passing through a hydraulic process, still contains fourteen per cent. of oil, which is worth as much as the cake sells for—namely, 6s. 6d. per cwt. This oil may be extracted by the application of sulphide of carbon in a closed apparatus. This will exhaust the greater part of the remaining oil, leaving a pulverulent cake containing all the constituents taken from the soil, to be mixed with other substances on the dung-heap; and thus full compensation is made to the soil for the crop of seed taken.

Referring to the series of compensations discovered, the superior laws of vegetable production adopted, and the possibility that even a simple system, excluding animals and the loss they occasion to the soil, may be found, he goes on to say:—

“But the fertility of the principles I have explained do not stop here. We must now abolish the practices pointed out to you, and replace them by a simpler agriculture, more mistress of itself and more remunerative. Instead of compelling ourselves, with infinite care and precautions, to maintain the fertility of the soil, we reconstitute it, in every respect, by means of the four agents which I have pointed out, and which we can derive from the great stores of nature. Thus no rotation of crops is necessary, no cattle, no particular choice in cultivation; the soil produces at will, sugar or oil, meat or bread, according as it best serves our interest. We export, without the least fear, the whole of the products of our own fields, if we see our advantage in so doing. We cultivate the same plant upon the same soil, indefinitely, if we find a good market for our produce. In a word, the soil is to us, in future, merely a medium of production, in which we convert, at pleasure, the four agents in the formation of vegetables into this or that crop which it suits us to produce. We are restrained only by a single necessity, to maintain at the disposal of our crops, these four elements in sufficient proportion, so that they may always obtain the quantity their (the crops’) organisation demands.”—P. 100.

These four agents, however, are not required in the same proportion for every crop. Each kind of produce has its leading one; thus, wheat and beet-root require nitrogenous matters; vegetables, potash; and roots, phosphate of lime (p. 104). It is, in fact, this difference in the quality of manure required in the different kinds of crops, that renders a rotation necessary under the present system of husbandry. For instance, green and root crops that are not allowed to seed, consume only those portions of a manure that nourish the verdure or leaves of the cereals; consequently, those which go to form the starch and gluten in the grain, remain in the soil intact, to be appropriated by the crop of cereals that follow them. Wheat, indeed, succeeds best, by having the manure applied to the clover instead of immediately to itself; because the clover by consuming those portions of it which produce a florid vegetation, lessens the tendency of the following crop to run to straw, by which it is prevented from being lodged or broken down by the wind and rain.

"By these simple combinations," says M. Ville, "we are in possession of a new agriculture, immeasurably more powerful than its predecessor. Formerly, the total matter placed by nature at the disposal of organised beings like ourselves, had its limits. All that the system in vogue could do was to maintain it, but none succeeded in increasing it."—P. 105.

The bearing of the new systems on the problems of human life and population, is adverted to by M. Ville. These, under the old system, had a barrier to encounter, that amounted to an impassable limit, but which is removed by the new processes. Substances that had no previous value, of which nature possesses inexhaustible stores, can be converted into vegetable products, forage for animals, cereals for man, &c. (p. 105). He then refers to the minute subdivision of the land in France, since the Revolution of 1789, and gives the following statement of the present condition of the landed property:—

Nature of Property.	Mean Extent.	Surface Occupied.	Corresponding Population.
	Acres.	Acres.	
Large Estates	415	43,320,000	1,000,000
Medium Estates	87.50	19,250,000	1,000,000
Small Estates	35.00	16,800,000	2,400,000
Very Small Estates . .	8.62	36,130,000	19,500,000
Totals		115,500,000	24,000,000

M. Ville is quite alive to the evils of this minute subdivision of the land.

"Of the 115,500,000 acres of cultivated lands," he says, "there are 36,000,000 possessed by proprietors whose estates do not exceed eight and a-half acres in extent. What kind of agricultural system can a man pursue who possesses only eight acres for everything, and who requires as much for the support of his family? How, and with what, will he obtain manure? He can have neither pastures nor cattle; he must, necessarily, farm badly; his land is fatally condemned to sterility and himself to poverty."—P. 107.

As a remedy for this evil he proposes the advance of money to the small farmers to purchase manure, to be paid for out of the produce of the land; in fact, to extend the *crédit mobilier* in principle to the whole body of the State, and thus include the rural population in a new system of centralisation of patronage, which is in other departments of social economy, the *rule*. We believe it would be of no use whatever to adopt such expedients; for nothing will or can avail, but an alteration of the law of succession, so as to promote the aggregation, instead of the subdivision, of the land. How can a body of men, like the small farmers of France, be imbued with the liberal ideas which a change, such as M. Ville contemplates, would require? Nor is it possible with so small a portion of land to carry out the new system, scattered and unenclosed as is a large portion of the landed property of France. The only effect of thus subsidising the nineteen millions of the rural population included in the last item of the table, will be to bring them more immediately and intimately under the wing—say the *power*—of the patriarchal government, beneath which France now lies submissive.

However erroneous and eccentric M. Ville's opinions on certain subjects may be considered, his work is extremely valuable for the clear and simple exposition which it gives of the new system of farming, and for the classification of the elements of production which he has adopted. Every one who understands the subject must admire the perseverance and exactness with which he has carried out his ideas. There is no doubt that his work will stimulate enquiry and experiment amongst men of science in this, as well as in other countries; all being alive to the importance of the subject. Great advances, in fact, have been made in the application of *special manures* since Grisenthwaite first intro-

duced the subject forty years ago. But, if M. Ville is not the originator of the *principle*, we are bound to consider him as the most advanced expounder of it, and as having simplified it, so as to bring it down to the comprehension of any one who will take the trouble to read his book. As he has obtained the patronage of the Emperor, we hope to hear more of his experiments, which must possess a deep interest with every enlightened agriculturist and lover of science.

- ART. III.—1. *Reports of the Civil Service Commissioners, Nos. I.—XI. 1856—1866.*
2. *Estimates for Civil Services, 1866—67.* Printed for the House of Commons.
3. *Papers relating to the Re-organisation of the Permanent Civil Service.* 1855.
4. *Report of the Select Committee on Civil Service Appointments.* 1860.
5. *Return to Two Orders of the House of Commons for the Production of Correspondence between the Civil Service Commission and the British Museum.* 1866.
6. *Civil Service Appointments.* By E. LETHBRIDGE, B.A. 1866. London: Cornish.
7. *Under Government.* By J. C. PARKINSON. London: Longmans.
8. *The Civil Service.* An Article by A. Trollope in the *Fortnightly Review*, No. XI.
9. *The Indian Civil Service.* An Article in *Fraser's Magazine* for October, 1866.

By the constitution of this realm, the national will is expressed by the joint action of the Sovereign and the two Houses of Parliament. They make the laws, they frame the internal organisation of the empire, and they determine its relation with the rest of the world. The exposition and execution of its will thus formed, is confided by the nation (through these its representatives) to the Civil Service of the Crown. In time of war, we deal with our foes through the medium of our army and navy; but they act under the direction of the civil executive. In time of peace, the diplomatic and consular bodies are our direct and only representatives with foreign powers; and at all times the nation deals with its own constituent parts through the civil service. The name, in its broadest definition, includes the whole vast machinery of our Government; and ministers of state, judges, and ambassadors, are only the more prominent members of a body, whose important functions, whose influence, and whose numbers and respectability, give it the best possible claim to our careful attention. When we add to this, the fact that its higher branches constitute a popular profession, admission into which is eagerly sought for by multitudes of our educated youth; and that its inferior

posts afford a certain and decent livelihood to an immense number of our fellow-countrymen in other grades of life; it will readily be seen that there is a large field for interesting and useful enquiry, in the consideration of the civil service, with regard both to its high duties and ends, and also to its nature, prospects, and requirements, when viewed in the light of a profession. In treating of its composition and functions, we shall take it in its widest aspect, as we have indicated it above; whilst in the social and economic portion of our subject, for obvious reasons, we shall limit our observations to that part which is commonly called the Permanent Civil Service, consisting mainly of the metropolitan public offices, with many subordinate offshoots at home and abroad, and with one grand department in India. Of this part we shall take into consideration only those appointments that are usually filled by persons of education, for these constitute the profession of the Civil Service. Above them are places that are prizes for the successful statesman, for the able or fortunate lawyer, for the clever diplomatist; or, occasionally, the endowments that are reserved for high rank when combined with energy or ambition. Below them are places which, though of considerable importance, are somewhat beyond the range of an article like the present. Herein we shall discover the apparent anomaly of a calling whose "good things"—in the Home Service, at all events—are very few in number, and of comparatively little value, nevertheless offering such powerful attractions, that a formidable barrier of educational and other preliminary tests has no terrors for the crowd of competitors that is always thronging its avenues. By this line of thought we shall be led to the much vexed question of competitive examinations—their advantages and drawbacks; about which, though the discussion has been opened and reopened again and again in the pages of nearly the whole periodical press, the supporters and enemies of the system are as little able to agree now, as they were on its first introduction in 1855. We shall study the theory of the educational test in its various forms; and we shall endeavour to show that the conclusions to which we may be led, are borne out by the facts that we can gather from the eleven years' probation through which the system has now passed.

The Civil Service of the British Empire is nominally defined as the body that is employed by the Crown for the country, in the transaction of the public civil business. For a descriptive definition we shall follow generally, though not

entirely, the broad divisions laid down in the Parliamentary estimates. These are:—I. The Public Offices; II. Education, Science, and Art; III. Law and Justice; IV. Colonial, Diplomatic, and Consular Departments. To these we must add a fifth division, the Civil Service of India; and there might be enumerated yet another, viz. those colonial appointments that are under the jurisdiction of the local legislatures; but this last branch we put aside as beyond our present purpose. The first and fifth divisions will demand by far the largest share of our attention; the others, which for this treatise we must regard merely as *πάρεργα*, we shall consider in a few words.

Out of eight millions sterling voted by Parliament for the expenditure to be provided for by the Civil Service estimates, nearly a million and a half is now assigned to the great division of education, science, and art. Thus in point of cost to the nation, it is one of the most important branches of the service; and doubtless the intrinsic importance of the vast interests hereby to be cared for, is immensely out of proportion even to this large outlay, when we compare with it the sums allotted to some other claims on the public purse. The truth of this statement has been allowed by most of the leading politicians and political economists of the present day; and the anomaly is only accounted for, and excused, by the more pressing urgency of other demands, and by the unfortunate exigencies of immediate necessity. Of the sum voted, such as it is, rather more than a million is expended in the direct encouragement of public education in Great Britain and Ireland; this has to provide for all the grants to the various elementary, normal, and other schools, as well as for the whole paraphernalia of inspection and administration. The aids granted to the Scotch and Irish universities and colleges, and to the London University, may be regarded as supplementary to the above. This department is presided over by a Committee of the Privy Council. It will readily be seen that, whilst the grave importance of its functions can scarcely be overrated, its place in the Civil Service as such is not a prominent one; for the majority of its *employés* have not a close and immediate connexion with the service; and the remainder—the inspecting and administrative portion of the staff, are comparatively insignificant in point of numbers. The unimportance of their position in the Service is, however, in a measure, neutralised by the great attainments and high standing of the inspectors of schools and the educational examiners as a body; who are, for the most part,

gentlemen who have won distinction at our great universities. We may notice here in the estimates, as an instance of the low value that is set on qualifications of this nature by those who have the ordering of such details, that the highest stipend (£600) attainable in this class after many years of continuous work, is not more than can be obtained by many clerks considerably below the highest rank in some of the more favoured offices.

The Science and Art Department, with its grand nucleus at the South Kensington Museum, and the great collateral establishment at the British Museum, have for their operations a field very similar to that occupied by the Education Office; for they, too, are mainly designed for the education and cultivation of the people. Here we find schools and museums in every division of art or science. The duties of the administration are for the most part technical; so much so, that for many posts a specific course of previous study is required. Thus we have at South Kensington numerous appointments like those of assistant geologists, assistant naturalists, and the like, which can be properly filled only by men whose tastes have already led them to a proficiency in their respective sciences; and a similar state of things exists at the British Museum. Of course the choice of men possessing the various qualifications required is somewhat limited; and this fact has been a fruitful source of complaint against the Civil Service Commissioners. We shall enter into this question more fully hereafter. We may however remark, in passing, that the plain point at issue between the Commissioners and the Museum authorities seems to have generally been, whether the former should admit to the Museum those persons—and those only—who might show the best knowledge of the subjects prescribed by the rules drawn up with the assent of those authorities, or whether special technical knowledge should not be allowed to outweigh all proficiency, and even atone for utter ignorance, in the prescribed subjects. Before leaving the department of Education and Science and Art, we will give a summary of the more important posts therein to which appointments are made. There are, in the first branch, the inspectorships and sub-inspectorships of schools, and the examinerships and clerkships in the Education Office; the patronage of which lies with the Committee of Privy Council on Education, and is virtually in the hands of the Lord President. In the latter branch there are the various clerkships and assistantships in geology, natural history, &c., at South Kensington, who also are appointed by

the Committee of Council;* and there are the assistantships in the different departments of the British Museum, who receive their nominations from the principal trustees, viz. the Archbishop of Canterbury, the Lord Chancellor, and the Speaker of the House of Commons.

We now return to our General Divisions. The third, that of Law and Justice, has a less intimate connection with what is conventionally known as the Civil Service, than any of the others; yet it takes about two millions and a half from the estimates, and consequently demands a few words in this article. This sum does not include the salaries of the judges, which are otherwise provided for, as follows:—The revenue of this country, from taxation and other sources, is collected into one great mass, called the Consolidated Fund. The first charge on the Consolidated Fund is the interest on our funded and unfunded debt. It is then charged with the payment of the Civil List to the Sovereign, for the maintenance of the Royal dignity and household; and also with certain annuities to members of the Royal Family. It is next charged with the salaries of the Cabinet ministers, the judges and other great officers of State; and it is only after all these claims are satisfied, that the surplus is paid into the Exchequer to provide for the general expenses of the nation. The patronage that comes under the head of Law and Justice is mainly exercised by the judges. It consists of the appointments in the various courts, and of numerous miscellaneous law appointments—such as revising barrister-ships and the like. It has been stated* by Mr. Horace Mann, the Registrar to the Civil Service Commission, that information about the legal branch is not readily procurable; and accordingly, in his discussion of the “practical working of the system of open competition” (of which he is an able and enthusiastic advocate), he neglects that branch altogether. An important department is that of Police; and the prisons and convict services in England and Ireland contain a number of lucrative and responsible posts: these are, we believe, subordinate to the Home Office.

The Colonial, Diplomatic, and Consular division, which stands fourth on our list taken from the estimates, has much more interest for us in our present discussion than either of the preceding. We shall here discard the arrangement followed thus far; for if we separate this department from that of the Public

* *Report of Civil Service Commissioners*, XI. p. 155.

† *Report of Select Committee*, Appendix 4.

Offices (No. I.), somewhat of a cross-division is produced. The Colonial Service is a branch of the Colonial Office in London, and under its control; whilst the Diplomatic and Consular services are similarly integral portions of the Foreign Office, and are managed from Whitehall. The same remark will hold of the vast establishment in India, which is ruled by the India Office. We have now, however, sufficiently cleared off those outlying branches of the Civil Service which (though from their importance necessarily included in this notice) are not essential to our purpose, to enable us to group the remainder of our subject, without endangering the clearness of our arrangements. We proceed, therefore, to describe the Public Offices at home, with their sub-divisions abroad and in the Colonies.

The Lords Commissioners appointed by the Sovereign to execute the functions of the Lord High Treasurer of England, and commonly called the Board of Treasury, are the head and chief of the whole Civil Service. They hold the purse-strings of the nation; and the enormous power in their hands is, theoretically and constitutionally, the reason for the substitution of a Commission of five persons in the place of one lord treasurer, who might become too strong for the equilibrium of the State. The five are, of course, the First Lord of the Treasury (usually, but not necessarily, the Premier), the Chancellor of the Exchequer, and the three junior Lords. All offices of financial administration, of receipt, and of simple expenditure, are under the immediate control of the Treasury; and the indirect influence thus acquired over the whole service is very great. In addition to the five Lords Commissioners, there are two Under-Secretaries of State, whose appointments are likewise political. The remainder of the central establishment of the Treasury is strictly a branch of the Permanent Civil Service, of which these posts are perhaps the most important and lucrative. There is also a class of supplementary Treasury clerks, to whom is committed most of the routine business; their duties are consequently little more than mechanical, though the salary is so good as to attract a body of men scarcely, if at all, inferior to those who hold much more responsible places in other offices. The chief offices of financial administration—we are here adopting the divisions and nomenclature of Mr. Horace Mann in the Appendix to the Report of the Select Committee—are (in addition to the Treasury itself) the Exchequer, the Audit Office, the Mint, and the Paymaster-General's Office. The principal depart-

ments of receipt are the Customs, the Inland Revenue, the Post Office, and the Woods and Forests. The three former are by far the largest establishments in the whole service, with the exception of the Admiralty and War Departments. The Inland Revenue is absolutely the largest for our present purpose, as we do not take into consideration the lowest classes, such as artizans, labourers, and the like. When a friend of the Government is asked to assist the son or *protégé* of a constituent, a nomination to one of these offices is the boon most readily accorded. The pay and general position and prospects are, as a rule, inferior to those of other departments. The offices of expenditure are, the Board of Works, the Stationery Office, and a few others. The Public Record Office, where the duties are akin to those of some of the higher scientific branches, and many miscellaneous offices (as, for example, those of most of the temporary and other Commissions), are under the control of the Treasury. Taking the whole of this great division, we find that there are about 36,000 persons employed; and of these, more than 9,000 are of that more or less educated class with which we are now especially concerned.

Our next division may be dismissed in fewer words. The business of the British Navy and Army is in the hands respectively of the Admiralty and of the War Departments; about 21,000 in the aggregate are employed in the former, about 18,000 in the latter. Of these numbers, nearly 2,000 in the Admiralty, and 3,000 in the War Departments, belong to the higher class of appointments; though these, of course, have widely different duties and positions in the various branches of each. Of those who are concerned with navy matters and in the naval executive, some are employed in the administrative offices at Whitehall and Somerset House; some in the great naval yards, steam factories, and other dépôts at home and abroad; whilst a considerable proportion of our numbers consists of civil officers actually afloat. The divisions of the War Departments are even less homogeneous; we have the great office of the Secretary of State at Pall Mall, and the lesser office of the Commander-in-Chief; the distinctive duties of the two are not very clearly defined, as recent debates in the House of Commons have demonstrated. There are also the offices of the Adjutant-General and of the Quartermaster-General, the Army Medical Branch, the Military Store and Commissariat Services, the Educational and Scientific Branches, and many other subordinate offshoots, too numerous to be given in

detail. Both here and in the Admiralty, it is somewhat difficult to draw a line around the Civil Service, because many of the branches in each partake of the nature of the combatant services with which they are intimately associated. In these remarks we have endeavoured to make a broad general distinction between combatants and non-combatants; we should add that, in considering the Civil Service as a profession, our main concern will be with the head-offices in London, and with the subordinate offices at what we may term the naval and military out-stations.

The Home Office has a very wide and miscellaneous jurisdiction. With it are connected the great sections of Law and Justice, and the Police and Convict Services, to which we have already alluded. The Registration department, and various Commissions (such as the Copyhold Inclosure and Tithe, the Charity, and those under the Factory and Labour Acts, the Fisheries Act, and others) are more immediately controlled from the Home Office; whilst the Poor Law Board is also a subordinate section, having its own representative in the Cabinet. If a condemned criminal is to be reprieved, the exercise of the Royal prerogative devolves on the Home Secretary; if a poacher has fixed an illegal engine in a salmon river, or a manufacturer has transgressed the Ten-Hours' Act, it is not unlikely that the same great officer will have to be the *Deus ex machina* of the prosecution. It will thus be seen that the duties of the head office are both varied in character, and often of grave importance, requiring much versatility and a discreet and sound judgment.

The province of the Board of Trade, which is nominally a Committee of the Privy Council, borders on that of the Home Office; and, in some cases, the boundary line might seem to the unofficial mind, at first sight, a faint and rather arbitrary one. The distinction may perhaps be best explained by two illustrations. In the control of our Fisheries, the department that is charged with the protection of public and private interests in salmon rivers, and similar rights, is ruled by the Home Office; that which is concerned with the encouragement, development, and protection of the fishery trade (especially in our Irish and Scotch fisheries) is under the dominion of the Board of Trade. Again, the Home Office directs the general registration of the United Kingdom; whilst the Seamen's Registry, and that of Joint Stock Companies, and of Designs, are branches of the Board of Trade. The whole of our vast mercantile marine is more or less amenable to the latter department; and hence its authority over such

corporations as the Port of Dublin and the Northern Lighthouses, and its connection with the Trinity House; all of which may be considered as sub-sections of this division. The statistical and meteorological departments are important sections of the head office.

The Privy Council Office, though in itself small, must be accounted one of our great divisions; partly, because its chief is an influential Cabinet minister, and it is the exponent of the orders of the Sovereign in Council; more especially because (in the performance of this function) it is the head of the great departments of Education, Science, and Art, and of other departments originated by similar orders in Council. Its offshoots are, for our present purpose, more important than the parent stock; and these we have already briefly considered.

Three divisions, the Colonial, Foreign, and Indian, now remain to be described. There is yet another—the Civil Service Commission; but this we reserve for our subsequent remarks. Each one of these three will be found to comprehend one or more of those great divisions, taken from the estimates, with which we started. Thus, the Colonial embraces not only the head office and its subordinate at home, the Emigration Office, but also all those establishments in the Colonies which are under its jurisdiction; those in Colonies which pay their own expenses, and which are under the patronage of the local legislatures, will of course be omitted here. The majority of the Colonial appointments are high political or judicial ones, such as governorships and judgeships, which are given directly to men of distinction at large, with no preference to men already employed in the service; and which, consequently, cannot strictly be considered a part of the regular service. The writerships in Ceylon are the chief exceptions; these are very similar to the much-coveted Indian appointments of which we shall speak presently, and usually attract the same class of men.

The Foreign Office, like the Colonial, derives but little of its importance to us from its establishment in London. But this small nucleus is the administrative *dépôt* and centre of all our diplomatic and consular services throughout the world, and the mainspring of the vast machinery that regulates our relations, and represents us as a nation, with other powers. Many mistakes have been made, and much misapprehension still exists, as to the nature and position of our consular service. The popular idea of a British consul is a vague one. It was recently stated in a leading news-

paper that "our consuls are mostly traders at the present time," whereas the truth is exactly the reverse.* There are only two or three actual traders in the service; and they are the survivors of the old school. A few unpaid vice-consuls at minor ports are engaged in commerce; but these would be better described as consular agents. It is true that, as a rule, the rights and privileges of our consuls are obscurely and diversely recognised, and the extent of their authority is not clearly understood or set forth; but the Commission, that sat in 1858 to enquire into the state of this service, has done much to improve its condition and to enhance its dignity; and it may now be regarded as a regularly constituted and consolidated branch of the Permanent Civil Service. The most lucrative consulates are usually conferred as rewards for state or political service; for instance, it was stated in the public press at the time of the death of the late consul at Havre, that he had obtained that place (worth £900 per annum) as a recognition of his ability and success as one of the North American Boundary Commissioners. The Diplomatic Service has one great advantage over nearly every other branch of the Civil Service; it is, that each one who enters it will have a chance of attaining to its highest posts, and with ordinary talent and good fortune may fairly hope for any except the very highest. Thus every unpaid attaché may look forward to the time when he will be a Resident Minister, or at all events a *Chargé d'affaires*; and it cannot be doubted that in this way hopefulness and self-reliance are encouraged, and a sense of responsibility developed. In the Civil Service at large this is not the case, as we shall notice hereafter; when we shall also discuss the reason why it is not, and consider whether that reason should be done away with. In the Diplomatic Service the social position and similar qualifications requisite for the dignified performance of such high functions, present and prospective, are ensured by the care taken in the nominations in the first instance; and partly also by the fact, that the aspirant to diplomatic honours is obliged to spend the first few years of his official career as an *unpaid* officer in the expensive society of a foreign Court.

The department under the control of the India Office is emphatically an *imperium in imperio*. It contains in itself all the elements that constitute our Home Government, and consequently reproduces under another aspect the forms of our

* For a full account of the Consular Service, consult the *Pall Mall Gazette*, Nov. 16th, 1866.

Home Civil Service. It has its own administrations for Finance, for Law, Justice, and Education. It transacts for itself the various duties of a Home and a Foreign Office, and of a Board of Trade; and also (though in a less independent way) those of an Admiralty and a War Office. It has frequently been affirmed that the position of England in the councils of Europe as a first-rate power is owing to, and maintained by, her preponderance in Asia; and the tendency of our European policy of late years has appeared to confirm that notion. Be this as it may, it cannot be questioned that any mistakes or malversation in our conduct of the affairs of India would prove disastrous to the English fame and prestige, if not to the material prosperity of England, in a little less degree than would be effected by similar blunders or crimes in our rule at home. Yet in India the promotion and other conditions of service are very different to what they are in England; all but the very highest officers, as in the Diplomatic Service, are drawn from the ranks; and every one of what is called the Covenanted Service, almost from the moment of his first entrance, has to perform high and important duties—duties worthy of his education and of his position in society. From the Fourth Report of the Civil Service Commissioners (1859), we learn that there are about 878 members of this Service; and that their salaries, commencing with between £300 and £400 (according to the Presidency), range from an average of £600 in the lowest class to one of £5,207 in the highest. The social position and other appanages of these posts are in accordance with the dignity of their functions. All these advantages are well set forth in the admirable and exhaustive essay on this subject, whose title we have quoted; at the risk of appearing to forestall in some measure the second portion of our discussion, we give a short extract from this paper. It should be premised that the author does not confine himself, in the context, to this bright side of the picture; whilst he fairly states the sweets, he describes in the strongest terms the many bitters that counterbalance them in the career of the Indian civilian:—

“To have some share, first in framing, and then in carrying out new and philosophic ideas of criminal, civil, and revenue law, as fitted to the condition of the people as knowledge and wisdom can make them, to be the chief executive power for miles and miles of a populous territory, to decide cases involving the succession to vast estates, or the life and liberty of individuals,—to vary these grave and weighty matters by planting trees, laying out roads, cleansing filthy towns and suburbs, and promoting vernacular and English

education,—to be the channel of communication between a government which, though respected by, is removed from, the mass, and a people which leans like a child on the strong arm of the English invader,—to know that the years of your prime are not clouded by disappointment or embittered by the want of means and the absence of patronage—these are considerations which may well justify a glowing contrast between the early struggles in an unremunerative profession in England, and the thorough independence, and the reasonable success of a career in India."

It is in this way that the India Service has become what it now is, the recognised prize of the cleverest and most ambitious of that portion of our educated youth whose circumstances or whose wishes necessitate the choice of a profession. Lord Ellenborough once said, "The Civil-servant in England is a clerk—in India he may become a pro-consul!"

We may now obtain a clearer view of our subject at large, having carefully analysed our subject-matter, and described its constitution and extent. We proposed to consider the Civil Service as a representative of the nation whose power it wields, whose discipline it guides, and whose collective duties it discharges—we now know the magnitude and importance of this body, and its vast and multifarious functions. We proposed to consider the Civil Service as a profession for the educated classes of this country—we are now acquainted with the different ramifications of this profession, and may form some idea about their relative requirements and attractions. We proceed then to discuss this latter portion of our theme in its more general aspect, and with the aid of the light thus acquired. We shall consider the various advantages and disadvantages that are attached to civil appointments under the British Crown; their position, emoluments, and other characteristics; the work to be done, the men whom the nation employs to do it, and the rewards it assigns to them. The question will naturally arise, Does the Service need re-organisation?—and thus we shall be led to the third and most difficult (because most controverted) part of our subject, viz. the mode of appointment to the junior posts. The two divisions thus indicated can with difficulty be entirely separated, for the two questions involved are almost mutually dependent. We shall, however, for the sake of clearness, endeavour to maintain the distinction; and in cases where the same fact or statement is necessary to both lines of argument, we shall not hesitate to repeat it or to refer to it again at length, rather than risk the confusion that would probably result from a junction of the arguments. We shall leave till last the full consideration of

the mode or modes of appointment; but it will be necessary, for the right understanding of the other branch of this subject, to state succinctly, without reference to their respective merits, the various methods that have obtained of late years in filling up vacancies. It should be noticed here that we do not include the legal departments in our subsequent remarks, unless they are referred to by name; they are unnoticed in most of the Reports we are reviewing, and when mentioned they are only spoken of as exceptions to the rules laid down for the others. Mr. Horace Mann (in the Appendix to the Report of the Select Committee) says, "Excepting the legal departments, as to which information is not readily procurable."

The reform movement which gave birth to the Civil Service Commission, culminated in 1855 with the Parliamentary Report, whose title we have placed amongst those at the head of this article. Its first great demonstration was the Report (embodied in that subsequent one) of Sir Stafford Northcote and Sir Charles Trevelyan in 1853, which did full justice to the abuses then existing in the Civil Service. Until this time the system of appointment had been one of patronage, pure and simple. The nomination was a virtual appointment, the slight checks that existed in some offices being (as we shall see) little more than formal ones. In those departments which possessed a political head, i.e. one who vacated office on a change of ministry, appointments were made by him;* where the chief was a permanent officer, the patronage was with the Board of Treasury. In consequence of the Report of 1855, three remedial methods were devised, and all three are at present in operation and may be regarded as being still on trial. The Civil Service Commission was instituted to carry these remedial measures into effect; and their duties may be understood, sufficiently for our present purpose, by the nature of the certificate which (by the Order in Council, 21st May, 1855) must be obtained from them by every candidate before he can be appointed to the permanent service, or become entitled to any claim on the Superannuation Fund. They must certify:—

"1. That the candidate is within the limits of age prescribed in the department to which he desires to be admitted.

"2. That he is free from any physical defect or disease which would be likely to interfere with the proper discharge of his duties.

"3. That his character is such as to qualify him for public employment.

"4. That he possesses the requisite knowledge and ability for the proper discharge of his official duties."

In the wording of the order, the rules applicable to each department, under each of the above heads, were to be settled, with the assistance of the Commissioners, by the authorities of the particular department; no change was to be made in the patronage, except in so far as it was modified by these rules; there was to be a period of six months' probation for each candidate, after his actual admission on the certificate of the Commissioners, during which—and this will be an important point in our later arguments—"his conduct and capacity in the transaction of business shall be subjected to such tests as may be determined by the chief of the department for which he is intended." The only exception to these rules may be made in favour of special professional requirements. The three remedial schemes or methods of appointment, which we mentioned above, differed mainly as to the literary examination under the fourth clause; the three other clauses as to age, health, and character, being included in all. The first scheme was that of open competition, modified only by these three necessary qualifications; this has been applied in its full force to the India Civil Service, but has ruled at home only in one or two isolated cases. The second scheme was that the patronage should remain as before, but should be guarded in its operation by a test examination before the Commissioners; this plan has been distinguished by the motto *detur digno*: whilst the third, whose motto has been *detur digniori*, was that (the nomination being vested as in the second scheme) several nominees should compete for each vacancy, and of course a proportionate number for a collection of vacancies. These two plans have been in general use, with some modifications founded on the Report of 1860, since the establishment of the Commission; the tendency having been towards the adoption, for the better class of appointments, of the last method, that of *limited competition*. We shall return to these hereafter. We now proceed to the consideration of the appointments themselves, and the men appointed.

A paper, carefully prepared by the Registrar of the Civil Service Commission, and embodied in the Report of 1860, gives us approximately the numbers of the classes under notice. He does not include the Indian service, nor the legal departments. The general result is as follows:—

I.—Heads of departments (political)	34
Ditto (non-political)	156
II.—Sub-heads of departments and heads of branches	1,489
Clerks (established)	13,768
Ditto (temporary)	389
III.—Professional officers (indoor)	1,922
Ditto (inferior)	1,921
IV.—Inferior officers (indoor)	2,259
Ditto (outdoor)	36,566
V.—Artisans and labourers.	29,613
VI.—Persons not wholly employed, women, &c.	14,941
	<hr/>
	103,058

It will be seen that we have only to do with the first two sections and the first part of the third; and our main concern will be with the second section, and the non-political part of the first. The third section may be dismissed in a few words. Its superior class consists of lawyers, doctors, and other professional men, whose practice is taken up and paid for by the Government, but who, in other respects, belong rather to the ranks of their respective professions than to those of the Civil Service. We may instance the solicitor's branches in many of the great departments, and the Medical Services attached to the Admiralty and the War Office; all these we must evidently exclude from the Civil Service considered as a distinct profession. The main stem of this profession, then, consists of the clerks (established and "temporary"), the sub-heads, and the non-political heads of departments. The great mass of first appointments are to junior clerkships; and the men thus appointed may expect, with ordinary good luck and ability, to rise through the different gradations of clerkships to the foremost ranks of that class, before they complete the forty years that are supposed to be the usual span of an official career. A few of the more fortunate will attain to the position of sub-heads or heads of branches; but this is the highest point to which the most soaring ambition or the most commanding abilities may aspire, and the attainment of such a place appears often to be a question of good fortune and longevity rather than of merit or genius. One of the sorest and most reasonable grievances of the Home Service appears to be that, whilst the political headships are of course necessarily and rightly occupied by the Government for the time being, the non-political and permanent headships are most frequently given, not to deserving men who have worked their way up the toilsome ladder of Civil Service promotion, but to

political partisans, or private friends, who have attained to eminence or prominence in some other and entirely distinct profession. We shall see the hardship of this even more presently, when we have seen the exact character of the promotion in most public offices. The class of officers comprised under the name of "clerks," may be described generally as constituting that portion of the Civil Service which is employed in sedentary occupations, involving no other than intellectual (or, at least, clerical) labour. They may be roughly subdivided into two classes, the one consisting of the clerks belonging to the higher departments, who, on entering the service, are employed in merely routine work, but who gradually rise to influential positions in such offices as those of the Treasury and the Secretaries of State; the other consisting of clerks in the Revenue departments, whose functions, though highly important, and requiring a large amount of intelligence for their discharge, do not, as a rule, demand the same amount of liberal education, knowledge of men, and general information, as are essential in the higher departments. Of the former and higher class of clerks, we may take those in the Foreign Office, and those in the Colonial Office, as fair specimens; and from the evidence of Mr. Hammond, one of the Under-Secretaries for Foreign Affairs, before the Committee in 1860, we shall be able to get a good idea of the position of the former, when we combine with it the more recent and detailed information obtainable from the Civil Service Estimates; whilst we may obtain some description of the latter from the correspondence,* in 1856, of the Under-Secretary for the Colonies (Mr. Herman Merivale, C.B.) with the Civil Service Commissioners. Mr. Hammond says that the junior clerks in his office are not called upon, during the first few years of their official career, to do much more than copy; that they enter at a salary of £100 a-year, rising by £10 a-year to £150, at which stage they await promotion to the next class. This promotion is made regularly, as vacancies arise, "except in flagrant cases;" the next class begins at £150 a-year, and rises by the same increment as before, to £300. Thus, if nothing has occurred to hasten or impede his progress, the gentleman who entered at £100 a-year, would, in the twenty-first year of his public service, be earning £300. Then comes the first-class of junior clerks, and from these the promotion is to the class of "assistant-clerks;" but, as the latter have to take charge of the division in the absence

* *First Report Civil Service Commission*, p. 64.

of the senior clerk, this promotion may be delayed, in case of incompetence to perform the high duties of the latter class. Speaking of the intelligence and position of the young men appointed, Mr. Hammond adds, "I think that a man coming into an office at twenty-one, seeing his compeers getting on (say at the Bar, making money), would very likely be discontented at struggling on with from £100 to £150 a-year for several years."

[*Question*] "But do not those high class of men know what they have to meet with in public departments?"

[*Answer*] "I believe very few people understand what the drudgery of a public office is. . . . In former times I have known clerks to be fifteen years in the office waiting for promotion."

Turning to the Colonial Office, we learn from Mr. Merivale that—

"The functions of the Colonial Office are remarkable for their variety, importance, and difficulty; and experience and ability of a high order are necessary to their proper performance. Perhaps it is not too much to say, that no department in the State requires qualifications of a higher order for the execution of the more important part of its functions. The clerks of the senior ranks are not only called upon to supply the Secretary of State with the results of their own official information and experience in order to enable him to form a decision on a given question, and to perform the practical operations necessary for carrying that decision into effect (although these alone are functions of importance); they have also to give their suggestions and advice to the Secretary of State on frequent emergencies, and thus to take a subordinate but material part in the conduct of the correspondence of the office with the numerous and variously governed dependencies of the empire. A sound and, if possible, a quick and versatile judgment, a mind trained to reasoning, retentiveness of memory, facility and accuracy of composition, a good knowledge of modern history and geography, and some knowledge of the elementary principles of law and jurisprudence, especially constitutional; these are among the qualities, natural and acquired, which may be said to be most frequently in requisition here. . . . To these may be added a knowledge of the most generally diffused modern languages; . . . a knowledge of figures and accounts, for which there is very frequent use; and, lastly, classical acquirements. . . . But it is essential to bear in mind one consideration, which, it may be feared, rather adds to than diminishes the difficulty of dealing with the subject. Although the above description of the qualities required in the higher departments of this office is in no degree exaggerated, it is nevertheless true, to revert a gain to the opinion expressed in the Report already cited, that the 'official education' which occupies generally the first years of a clerk's

employment (more or less according to circumstances over which the clerk himself can have but little control) must partake, in a great degree, of a mechanical character."

We have quoted these expressions of fact and opinion at length, as we think them of considerable significance, coming from such high authorities as Mr. Hammond and Mr. Merivale. We obtain from them a good notion of the general duties and responsibilities of the superior class of public officers. There appear to be two points that are fairly open to criticism. The first point is that an unnecessarily long period of an official career is occupied in mere official drudgery, copying, and the like, during which the highly-educated and intelligent Civil servant has to perform duties that could be equally well discharged by a person of inferior education, and is paid at a rate at once far below what is due to his mind and his position, and far above the actual value of the work at which he is kept. The second point is one to which we alluded before—viz. that the duties of the foremost ranks of clerks, and of the sub-heads of departments, demand so much experience, such ripe and accurate judgment, and such high general mental and moral qualifications, that the able and zealous discharge of these might well entitle the deserving public servant of this rank to the only promotion possible in such cases; that is to say, to the headships of a department, where such headship is not necessarily a political office. Both these criticisms will apply, though with diminished effect, to the inferior offices—those of Revenue and the like; for though the class of men appointed are, probably, not so highly educated, as in the cases we have taken, it appears that the years of drudgery and inadequate pay are even more than proportionately prolonged. With regard to the first point, the opinion seems widely spread amongst the best authorities (and we might quote the evidence of Mr. Arbuthnot of the Treasury, Mr. Merivale, Sir B. Hawes of the War Office, Mr. Hammond, and others) that a certain amount of "official drilling," in copying and other mechanical and routine work, is essential to the education of a thoroughly good and efficient government clerk. We cannot, then, doubt the necessity for an experimental knowledge of this routine; the difficulty seems to be that this acknowledged necessity has had the unfortunate effect of very generally jumbling together the intellectual and the mechanical work of the various offices, by uniting them in the duties of the junior officers. The excess, in point of duration and of continuous application, of this routine-education

is as prejudicial to the development of high administrative ability, as its entire absence would doubtless prove to the proper use of that ability. An esteemed writer has recently said on this point:—

“It is an inevitable defect that bureaucrats will care more for routine than for results: or, as Burke puts it, ‘that they will think the substance of business not to be much more important than the forms of it.’ Their whole education and all the habit of their lives make them do so. They are brought young into the particular part of the public service to which they are attached; they are occupied for years in learning its forms—afterwards, for years, too, in applying those forms to trifling matters. They are, to use the phrase of an old writer, but ‘the tailors of business; they cut the clothes, but they do not find the body.’ Men so trained must come to think the routine of business not a means but an end—to imagine the elaborate machinery of which they form a part and from which they derive their dignity, to be a grand and achieved result, not a working and creaking instrument. But in a changing miscellaneous world there is now one evil and now another. The very means which helped you yesterday may very likely be those which most impede you to-morrow—you may want to do a different thing to-morrow, and all your accumulation of means for yesterday’s work is but an obstacle to the new work.”

The evils that result from employing the same class of men to do the combined work of two essentially different classes have been very generally acknowledged; and attempts have been made in many departments, in a somewhat partial and unsystematic way, to lessen the burden by the introduction of a distinct copying-class, under the appellations of “supplementary clerks,” at the Treasury and the Board of Trade, “extra clerks” at the Customs and Post Office, “writers” at the India Office, “copyists,” and a variety of others in other offices. Many suggestions have been made in reference to this acknowledged evil, and several are given in the reports before us: the most detailed are contained in an elaborate paper by Mr. Horace Mann, appended to the Report of 1860; in a paper by Mr. Lingen, of the Education Office (1854); and in the evidence of these two gentlemen, and of Mr. Arbuthnot, in 1860. Mr. Arbuthnot, who is Auditor of the Civil List, and consequently one of the high authorities at the Treasury, after stating that it was very difficult in such a department to draw a line between the different classes of work, beyond the line of the mere mechanical duty of copying, proceeded with his evidence, in answer to the questions of the Select Committee, as follows:—

"Would you propose to throw the whole establishment into one, and make every man enter as a copyist, with a view to rise to be Auditor of the Civil List?—No; but I would make every one go through the probation of copying; I would not take a man out of the copying department until he was able to write a good hand, and index well.

"That is, having a copying department, you would put each established clerk through a course of it, but you would still keep the copying department?—I would still keep the copying department."

This plan appears, by the remainder of the evidence, to have been adopted, to a certain extent, in the Treasury; the supplementary clerks forming the copying-class. One flaw in the arrangement is pointed out as having been the cause of much discontent and heart-burning; comparatively little difference has been made between the pay of the higher and of the lower class respectively, and the result has been that a set of men has been attracted into the lower class scarcely, if at all, inferior in point of culture to the established clerks—several of them being, in fact, graduates of universities; these have consequently, and naturally, become disgusted with the character of their work, and with their anomalous official position. In the administrative establishment of the Education Office a more thorough measure has been adopted, and its working, according to the authoritative statement of Mr. Lingen, the secretary to the Committee of Council, leaves little to be wished for. The Inspectors of Schools, of whom there are sixty-six, form a class to themselves, and are, of course, a special peculiarity of this department. In the office itself there are, under the nominal headship of the Lord President and the Vice-President, a secretary and two assistant-secretaries, who are the permanent staff-officers; under them there is a limited class of superior officers, called examiners, who manage not only the examinations connected with public education, but also divide among them the correspondence of the department in the first instance. That body constitutes the upper part of the office, and then the whole of the work under them is discharged by a body of fifty-two clerks, grouped in three classes, and paid and promoted according to the usual plan. Mr. Lingen's justification of this arrangement confirms some of the arguments we have already put forth. He says,

"There is such a very large mass of detail work, which requires great method and arrangement, almost of the nature of an actuary's office or of a bank, requiring a large body of men, with habits of business and habits of exactness, but not a very high standard of education; but over them we want a certain number of very

highly educated men indeed, to direct the correspondence, and to direct the mechanical work. Whether all other offices would present quite the same features as our own in that respect, I could not undertake to say . . . I think my paper [of 1854] turns very much upon the division of work in every office; my idea had been to mark out the office completely in two divisions."—*Report of Select Committee*, pp. 218, 219.

This idea, as we have seen, has been carried out at the Education Office; an inferior division has been constituted, obtained by a species of indirect open competition, which has resulted from freely giving nominations to the Society of Arts, and other educational bodies in the same rank of life; whilst the upper division has been appointed directly into the office, usually from young men who have been at the universities, and appears to be obtained, in the majority of cases, by a selection from the higher classes in the honour-lists at Oxford and Cambridge.

Mr. Horace Mann, in the well-matured and elaborate scheme* (to which we alluded above) for a somewhat similar division of labour, appears to shrink from the responsibility of recommending an entire reorganisation of the Civil Service, such as would be involved in adopting a thorough measure like that on which the Education establishment is framed. This view is incidental to Mr. Mann's particular line of argument, which is almost wholly based on motives of economy; he enters very little into the question of general expediency, but what he does say on this subject appears to favour a more complete revision of the service. The main feature of his plan is a proposal to employ a staff of strictly temporary clerks (principally lads, and with no claims to any superannuations) for the mechanical work; and in this work he includes, not only copying, but also indexes of names, filling up forms, docketing letters, simple arithmetical work, reading proofs to another clerk, and similar duties; and all this, and even some more intricate business, he informs us is transacted at the Civil Service Commission by such youths. He affirms that the objection to the plan of assigning the whole of this routine duty to the hands of the subordinate staff, on the ground that it would involve a loss to the superior officers of the necessary acquaintance with these details, is certainly without foundation. The very nature of the duties of a superintendent would impose upon him the necessity of mastering all the details of the business to be executed under

* *Report of Select Committee*, Appendix, 1860.

his control; "and this mastery," he justly adds, "extending to a variety of details, would be much more valuable than the familiarity with a single process, acquired by a clerk whose attention is restricted to some particular detail, and who, therefore, does not perceive the relation of one detail to another, and their combined effect upon the entire scheme of work."

We observed another point that appears to be open to criticism in the present system of organisation, as unfolded to us in the evidence we have cited; viz. the virtual closing of many of the highest permanent offices in the service against the regular members of the service itself, by the custom that obtains of making these good places the prizes for extraneous merit or success. That this obvious injustice is not rendered necessary by the incompetency of the class we have termed sub-heads, is plain from the nature of their functions, which often (perhaps usually) include those of the nominal heads, except in matters of form and ceremony; and this fact is confirmed by the whole tenor of all the Parliamentary papers before us; wherein the most profound homage is paid to the high abilities, zeal, energy, and other administrative virtues of chief clerks, and sub-heads generally, as a class. Mr. Anthony Trollope, in the *Fortnightly Review*, is reasonably severe in his censure of the impolicy of the system. After referring to the opinion expressed by Sir Stafford Northcote and Sir Charles Trevelyan in the Report of 1853, that it would be natural to expect so important a profession would attract into its ranks the ablest and most ambitious of the youth of the country—that the keenest emulation would prevail among those who had entered it—and that such as were endowed with superior qualifications would rapidly rise to distinction and public eminence—Mr. Trollope pertinently asks what the Civil Service offers in return for ambition, keen emulation, and superior qualifications. He illustrates his answer by another reference to the same authorities, who in another place state that few public servants would feel the appointment of a barrister of known eminence and ability to some important position, like that of Under Secretary of State, as a slight or discouragement to themselves! He indignantly continues:—

"It is to be considered as no slight to twenty men that a barrister should be put over their heads—because he is a barrister! And yet it is expected that the ambitious youth of this country will seek a

profession which is to be subjected to such usage! The rewards actually existing in the Civil Service and within possible reach of those who enter it young, are not rich. There is no bench, as there is for the church and the law. There is no possibility of a great career. There is a comfortable certainty which will attract many; and those that are so attracted will be higher in quality the fewer be the numbers of outsiders, barristers or others, who are allowed to poach upon such moderately good things as the Civil Service has at its disposal."

The Select Committee of 1860 seem to have had this point in view, when they declare their opinion* that success in obtaining qualified candidates for the Civil Service, must depend quite as much on the prospects and opportunities of promotion subsequently held out to the clerk in his official career, as on the immediate pecuniary advantages offered, or the judicious selection of young men in the first instance.

We now return to the consideration of the various modes of making the first appointments to the junior posts, that have been in use or that have been proposed. This portion of our subject, as we have said, has already been the battleground of many and fierce contests; the rival systems of simple patronage—patronage qualified by a test, or still further limited by a competitive examination—and absolutely open competition, have all had their eager supporters and their violent enemies. We propose to review, as briefly as possible, the apparent merits and defects of each of these methods as revealed in the evidence before us. Space would fail if we attempted to follow the manifold turns and windings of the controversy at length, as it has been waged in the current journalistic literature of the last ten years. In the good old times, when party influence did everything, and when numbers of places in the Civil Service were looked upon as sinecures to be enjoyed by the more stupid or lazy sons of powerful or well-befriended men, the nomination was an absolute one; and was dispensed, as we have already said, by the political chief of the department, if it had one—by the Treasury, if it had not. The ever-increasing pressure of public business, and the frequency of ministerial changes, combined to swell the proportions, and to increase the importance of the permanent service; until at length, a separate department, under the "Patronage" Secretary, had to be instituted at the Treasury to direct this part of the business. It has been almost universally supposed that this patronage must be a

* *Report*, 1860, p. xv.

very valuable addition to the rights and privileges of those in power; but we learn from the evidence of Mr. Fremantle,* that it is usually regarded rather in the light of a troublesome and invidious duty. Mr. Fremantle states that he has been private secretary to the Patronage Secretary under several governments of different political views; he has, consequently, had the best opportunity of forming an accurate judgment on the point; and he distinctly states to the Select Committee his belief, that the patronage is of no advantage to the Government, and that the power of recommendation is considered to involve an irksome duty by most members of Parliament. A system whereby a man could obtain a certain provision for life, merely by the influence of his friends, and without the slightest merit on his own part, could not fail to have the worst effect on the general tone of its nominees. The Commissioners of 1858 observe, that "admission into it (the service) is indeed eagerly sought after; but it is for the unambitious, the indolent, and the incapable, that it is chiefly desired." It was but natural that those whose abilities did not warrant an expectation that they would succeed in the open professions where they would have had to encounter the competition of their contemporaries, and those whom indolence of temperament or physical infirmities unfitted for active exertions, should be placed in a profession which would afford an honourable livelihood, into which the admission was not barred by a single mental or bodily qualification; and the facts disclosed in 1860, proved that this was what actually did occur. The case of the Registrar-General's Office, detailed by Major Graham in his evidence, is probably and apparently a very extreme one; but it incontestably demonstrates the necessity of some measure to prevent even the possibility of such a state of things. Major Graham says, that on the occasion of his Office (for the Registration of births, deaths, and marriages), being constituted in 1836, "a great number of those appointed were very objectionable on account of age, on account of their broken state of health, and on account of their bad character, and want of proper qualifications." One of these persons had been imprisoned as a fraudulent debtor; another was detected by Major Graham himself in a fraudulent act; one was unable, from his state of health, to associate with the other clerks, and died shortly after a separate room had on this account been provided

* *Report*, 1860, p. 89.

for him ; the accountant had to be removed for inefficiency ; the deputy-registrar did not attend the office for fifteen months, when his appointment was cancelled as unnecessary ; the services of the solicitor attached to the office were also not required, and his duties were transferred to the solicitor to the Treasury ; twelve of the least efficient clerks were discharged by Major Graham on his appointment in 1842, and eleven or twelve more were removed subsequently on the same ground, besides four who were dismissed by Major Graham's predecessor for disgraceful conduct. It is consoling, after such a recital, to be assured by Major Graham that the state of affairs has of late years been entirely altered ; and that such things would now be impossible.

It was a point much insisted on by the supporters of the old system of simple patronage, that it afforded the Government an economical and ready way of gracefully rewarding the services of their old and tried servants by making a good provision for their sons. It was contended that the high education necessary to enable the sons of meritorious officers to enter the lists of a competitive examination successfully, would be too expensive for the means of most civilians. This argument seems based on very questionable notions of State economy ; it must be evident that it would be bad policy on the part of any government to atone for its parsimony to the fathers by accepting the second-rate services of their incompetent children. Most of the witnesses in 1860 were of opinion that justice and national gratitude demand that some preference should be shown to those young men who have an hereditary interest in the Civil Service ; but they were unanimous in declaring that this should only be the case where the aspirants are well qualified for the duties which they propose to undertake, and where the service would not be injured by the rejection, in their favour, of better men. The preference, in point of fact, should only take effect when all other motives of choice are equal ; and this would seem to be the usual course at present ; for nominations are freely given to this favoured class without regard to political influence ; but the nominations confer nothing more than a right to compete with other nominees.

The system of making the admission into the service dependent on a literary examination was not entirely unknown before the institution of the Civil Service Commission ; in the Admiralty, the Customs, and some other offices, departmental examinations were held ; but they were in

general little better than illusory. Sir Richard Bromley describes those at the Admiralty; he says, "It became so much a matter of form that we used to have an examination paper, which was generally known about the office, and which every one almost had access to; it was, if I may so describe it, a leaping-bar test, and if the clerk did not quite come up to the test the bar was somewhat lowered until he made such a jump as to clear it. . . . It was in my opinion a very strong reason for having an independent Board of Examiners."

Such was the general complaint and such the general want, to meet which the Civil Service Commissioners were appointed in 1855. We have already stated that their duties may be classed under four heads of inquiry, corresponding to the different qualifications with which they must credit every candidate before he can enter on his appointment; inquiries, namely, in respect of age, health, character, and literary attainments. There has been, and can be, little doubt about the necessity for inquiries under the first three heads. Some slight objections have been raised about the investigations into the moral qualifications of candidates. It has been urged that a sufficient guarantee is already afforded by the sense of responsibility attached to the power of nomination; but this is disposed of by the fact that within four years (1856—1859), seventy-six persons who had been duly nominated were rejected by the Commissioners on the score of moral delinquency; and, indeed, it is a matter of common notoriety that patrons as a general rule know little more of their nominees than that they are the relatives or *protégés* of constituents or of private friends. Another and more plausible objection has been urged with considerable vehemence by no less an authority than Mr. Trollope, with regard to the *mode* of conducting these invidious inquiries, which has been by secret and confidential reference to former employers, to schoolmasters or tutors, and to referees named by the candidate himself. Mr. Trollope says, "The whole theory is bad and unnecessary. In the old days there was complaint of want of education on the part of newly appointed clerks, and there was some complaint in regard to their physical deficiencies. But I believe that I am justified in saying that there was no complaint as to the moral character of those who entered the service." This belief is at once proved to be erroneous by the evidence of Major Graham; but Mr. Trollope goes further:—

"The men rejected on character may probably have been worthy of rejection. But the causes of rejection should have been ascertainable.

The fault is, that the Commissioners have enveloped themselves in a panoply of secrecy—which secrecy is itself an evil . . . But I deny that he is where he was before. All his friends, all those on whom he has to depend, far and near, know that his certificate has been refused on the score of his character; and he is unable to tell them why it has been so refused. It is idle to say that a man so circumstanced has not been injured."

The secrecy that is here so much objected to may be "antagonistic to the instincts of an Englishman;" but we believe it to be necessary, if the inquiry is to be anything more than a mere form. If the Commissioners were bound to disclose their reasons for rejecting candidates, and the latter were to be allowed to defend or excuse their alleged misconduct, the result would doubtless be a sort of irregular and scandalous trial; in which the person who, from conscientious motives, had (probably with pain and reluctance) given the dammatory information, would be compelled to assume the odious part of public prosecutor. In such a case it would rarely happen that even in the most flagrant instances any one could be found at once so bold and so conscientious as to face this duty for the good of the public. As it is, every candidate knows what he has to expect, and we may safely affirm that few whose antecedents can bear inspection will dread the ordeal. It is true that we have to put so much faith in the honesty and discretion of the Commissioners as to believe that they will exact rigid proof of the imputed wrong-doing, and not allow themselves to be influenced by the vague or random statements of unknown and perhaps malicious persons; but there is nothing unreasonable in such belief as this; we habitually, and without fear, repose a similar confidence in our judges, and even in our justices of the peace. Mr. Trollope himself allows that it has not been an unreasonable faith hitherto; for "the men selected (as Commissioners) have, by the force of their own names and reputation, given us the strongest warranty that evil would not be done;" he only fears for future Commissioners, and asks, "*Quis custodiet ipsos custodes?*" But the blame would rest in the case of improperly chosen Commissioners, not with the system that confides so much to them, but with the Government that could nominate to such posts men unworthy of such high confidence; the only remedy proposed by Mr. Trollope (beyond the implied abolition of this test altogether) is to make the Commission directly subject to the Treasury; who would thus be accountable to Parliament (and through Parliament to the nation) for any injurious decisions

of the Commissioners. But we have seen in the recent case of the British Museum candidates, that the Commission is already virtually answerable to Parliament for its conduct; and any direct control from the Treasury would, in itself, nullify one of the main objects for which the Commission was created, inasmuch as the latter would no longer be an examining board apart from, and independent of, those who possess the power of nomination.

The most powerful and most sustained attacks that the Civil Service Commissioners have had to bear, have been directed against their literary examinations; and here, as in the case of their investigations into character, objections have been raised both against the system itself in general and against their particular methods of working it. It does not necessarily follow that this part of their proceedings is more vulnerable or less reasonable than their other duties; it is quite natural that this should be the part most frequently and most fiercely assailed; for herein are to be found the most striking innovations that have been introduced by the late changes. It must be remembered, too, that these innovations have destroyed many rights of patronage and much nepotism and favouritism; and that incompetence of every kind has been hardly dealt with, even when backed up by powerful interest. In this way lamentations arise both from the patrons and from the rejected candidates. The Commissioners in their Second Report allude to this; they say, "We cannot, nevertheless, shut our eyes to the fact that each rejection must cause disappointment to the candidate and dissatisfaction to his friends; that these feelings naturally find vent, sometimes in complaints against the system of examination, sometimes in criticisms on the details of our proceedings."

Of the latter kind of complaints, those, namely, against the particular procedure of the Commission apart from the general question of an educational test, one of the most serious is fully detailed in the correspondence relating to some appointments in the British Museum, published as returns to two orders of the House of Commons; and this complaint we notice in this place, because, in many respects, it may be considered to be typical of its class.

We have not space here to enter at length into the merits of the controversy which has been warmly carried on in the pages of several well-known critical journals; we can only briefly state the case and its leading points as they appear to us. The appointments in the British Museum are made on

the principle to which we have assigned the motto *detur digno*; that is to say, the principal trustees nominate a candidate, who has to satisfy the Civil Service Commissioners that he is fit for the place in other respects, and that he comes up to a certain standard in literary attainments. A person who had always been employed in the entomological branch in an inferior capacity was thought worthy of promotion, and was nominated accordingly to one of the junior posts of the superior class. The promotion was probably intended as a reward for special technical merit; and it is only natural that the Museum authorities should feel annoyed that the man of their choice should be rejected, mainly for ignorance of a prescribed subject, the knowledge of which could in no way affect his entomological usefulness. But this is only a portion of the grievance of the Museum. In 1864, a candidate for an assistantship was passed by the Commissioners, who, according to the Principal Librarian, ludicrously broke down as soon as he was put to the test of actual work. On these two cases, the Principal Librarian somewhat hastily concludes that "as the certificates are now given, it is quite impossible to feel any confidence in them." But it must be remembered, with regard to the first case, that these prescribed subjects had been settled by the Museum Trustees themselves, with the consent of the Commissioners; and that the latter could not rightly grant their certificate to any one who, however proficient in the other subjects, was entirely ignorant of any one—just as, at Oxford, ignorance of Bible history will pluck (and has plucked) a sure first-class as ruthlessly as if he were a mere pass-man. With regard to the second case, the candidate alluded to has published a memorial to the Trustees (reprinted in this Return) from which it would appear that he has been rather harshly dealt with, and that his blunders—most of them in the translation of crabbed mediæval documents which many scholars would be unable even to read—have been made the most of. Whether this be so or not, the charge against the Commissioners must fall to the ground from the mere fact that their certificate only professes to be an *a priori* warranty; they have uniformly insisted on the necessity of their guarantee being confirmed by the actual and experimental test of a six months' probation; and this, in fact, is enjoined by the Order in Council under which they act. Much has been said both in these and similar complaints, and in the criticisms of the press thereon, about the refusal of the Commissioners to justify their decisions by the production of the examination papers;

but it has always been considered the inalienable right of every examining body, whether at the Universities or elsewhere, to repudiate the indignity of an appeal to any other tribunal.

The various objections that have been raised against the system of a literary test generally, are somewhat conflicting. It has been stated that no examination can properly test a man's qualifications as a clerk; that whilst the successful candidates will often be good men in many respects, they will not unfrequently be wanting in diligence and business-like habits. These objections are urged with increased force against competitive examinations; it is added that the men will often be too good for their work, and will thus become discontented or insubordinate; that cramming and superficial reading and smattering in new branches of study will be encouraged. In appointments by open competition these accumulated evils are aggravated, according to the opponents of the system, by the danger of either getting men socially objectionable, or of confining the choice to men rich enough to procure a high education; by the absence of a safe guarantee for their moral qualifications; by the supposed difficulty and expense of the method; and by many similar risks and inconveniences. Most of these objections can only be dealt with by reference to actual experience. Up to the time of the sitting of the Select Committee, the evidence of experience was, in the opinion of that Committee unquestionably in favour of a *bonâ fide* competition of some sort, and had a tendency towards a support of open competition; and subsequent results do not appear in any way to invalidate this testimony.

Every vacancy in the India Civil Service has of late years been filled up by a general competition, open to all natural-born subjects of the Queen, under certain limitations with regard to age, health, and character; and the scheme appears to answer admirably for the service, notwithstanding a considerable amount of jealousy from some civilians of the old school from Haileybury, the sneers of one of the most influential weekly reviews, and the evident distrust of other portions of the English and Indian press. We have full particulars of the progress and working of the method in the Reports before us; and the results therein set forth, seem to contradict in almost every particular, the adverse anticipations which we have quoted. The successful candidates appear to be drawn, with very few exceptions indeed, from the same social ranks that supplied Haileybury. Of course the hereditary character of the service has been less marked

than in the time of the old school ; but it is a remarkable fact that, whereas formerly the preponderating element consisted of sons of old civilians, it now consists of sons of the clergy—men not less respectable in a social point of view, and who certainly cannot, as a rule, owe their success in learning to their abundance of riches. The classes that will probably benefit most by the adoption of open competition, are exactly those who have otherwise the greatest difficulty in suitably placing their sons in life ; those classes, namely, who are best able to appreciate the advantages of a high education, and who, therefore, will make any sacrifice (if necessary) to give their sons this advantage ; but who actually do not possess the means to continue the course to such an extent as to follow it to its ordinary end, a good settlement in one of our great liberal professions.

We have already indicated the plan that is usually followed in the investigation of the character of candidates, and have answered the objections made to it ; it is manifestly as applicable to open competitions as to any other mode of appointment. With regard to physical qualifications—a point of vital importance in a climate like that of India, and in a profession in which it may chance that much of the duty will have to be performed far from European aid, and will demand a constant life in the saddle—it has been the fashion with some writers to insinuate that candidates chosen for their learning will, as a rule, be poor weakly creatures, bad riders, unfitted for hard exercise, and in fact mere bookworms. We need only cite the manly and hardy habits of our universities and great public schools, to prove that this theory is not usually true in practice. Most Oxonians will bear witness, that the colleges that take the foremost place in the class-lists, are also generally, in proportion to their numbers, the most distinguished on the river and in the field.

Before leaving the subject of open competition, we should notice an alternative scheme, proposed by Mr. Horace Mann in 1860, and based on what is called *open nomination*. It is substantially the same as the open competitive plan, with the simple modifying clause, that each candidate must produce a nomination from some person in a responsible position—a magistrate, or clergyman, or the like. The modification will appear of little consequence, when we remember that it is already virtually in operation, only as a sequel instead of being a preliminary to the examination ; for the inquiries of the Commissioners into the moral qualifications of candidates are practically always addressed to responsible persons. It

was, however, adopted as an extra precaution in the only thoroughly open competition that has been held for civil appointments at home, when nine writerships or inferior clerkships in the India Office were competed for by 891 candidates; and on this occasion the plan is reported to have succeeded admirably.

The system that is most in use in making the home appointments, that of limited competition, is avowedly a compromise between the simple test of bare literary efficiency, and the plan of open competition. It finds favour with many opponents of the latter scheme, inasmuch as it preserves, and indeed increases, vested rights of patronage. On the other hand, the practical working of limited competition is shown to be frequently unsatisfactory, and sometimes painfully unjust, by the admissions of the examiners themselves before the Select Committee. The candidates being grouped in small numbers for the various competitions, it very often happens that the lowest candidate in one set obtains more marks than the winner in another set; and in this way, success in a limited competition often indicates nothing more than good fortune in being grouped with very inferior men. The Report of 1860 was very decided on the impolicy and injustice of such a method; and strongly recommended that as many vacancies as possible should be competed for at once, so that the winning candidates should be actually, and not only relatively, the best men nominated. The subsequent proceedings, however, of the Civil Service Commission, show that few departments have acted upon this suggestion.

Whatever may be the comparative merits of the two forms of competition, there can be very little doubt about the superiority of both over the mere test of efficiency. The Select Committee agreed with the Commissioners in urging that, as long as the qualified candidates for the service are more numerous than the vacancies, we should follow, in making a necessary selection amongst eligible men, the reasonable rule *detur digniori*. They affirm that the system of pass examinations, applied as a check on the nomination of individuals, is difficult to maintain at its proper level. The minimum standard directly interferes with the discretion of the authorities who appoint; it frustrates the wishes of the patron; it causes delay and inconvenience, by the rejection of candidates, and the necessity of providing others; and the rejections throw unpleasant discredit on the patron. If these rejections are frequent, their frequency,

instead of being ascribed to the unfitness of those sent up to pass, is attributed to the standard being fixed too high. Again, the candidate who fails after nomination, considers himself aggrieved by the loss of an appointment which he had looked upon as his own, and his patron probably shares in the feeling. These objections do not apply to the method of competition. The candidate who fails in a competitive trial is not rejected as unfit; he is made to give way to some one else who has proved himself intellectually fitter. There is no inducement to lower the minimum standard of qualification, for that minimum is supplied in most cases by the competition itself. Nor can it be said that the standard is fixed too high for the requirements of the office to which it is used as a means of admission; for the fact of candidates coming forward to compete, shows that the prize is thought worth the cost of its attainment.

Of all the objections that have been raised against the broad theory of a selection on literary considerations, the most sweeping is to the effect that no examination can test a man's merits as a civilian. Lord Ellenborough, when Indian Secretary, said on this point, "I feel the vanity of examination when applied to the discovery of abilities for administering an empire. It can exclude the man clearly unfit, and direct the studies, and thus open the mind of the man who may seem to be worth a trial. It can do no more. *But let us try to do that.*" It is allowed, on all hands, that the fact of a man's passing a creditable examination is a satisfactory proof of his having acquired habits of application, conscientious industry, and perseverance; and these and similar qualifications (thus indirectly discovered) are exactly the most essential in the public service, and the most difficult to ascertain by any other mode of selection.

The idle fear that success in these trials of skill is obtainable by other means than actual ability and industry, has been maintained by the cry, that even at the present time is often raised, about the danger of what has been styled "cramming"—a name that contains in itself a *petitio principii*—a name that begs the question of the applicability of the implied process to preparation for examinations of this kind, and that foolishly condemns, by implication, any special preparation at all. As originally used, the word signified the process of getting up a vast quantity of facts and details, dates and the like, to be retained in the memory for the short period that must elapse between the preparation and the reproduction on paper in examination; which fictitious knowledge, having thus

served its turn, was supposed to be of no further use to the recipient, and to be consequently discarded from his mind as soon as possible. A little consideration will show this to be an error; the greater part of the early career of an eminent barrister (for instance) must consist in thus alternately "cramming" facts and precedents for the case in hand, and discharging them from his mind when the case is over; but it will be in this way that his experimental and practical knowledge will be gradually acquired. The author of *Civil Service Appointments*, speaking of the historical paper (which he calls "the favourite domain of the special crammer"), says:—

"I do not regard this as in any wise detracting from the merit or value of such a knowledge; a widely comprehensive and philosophical appreciation of the science of history, viewed in its broadest aspect, cannot be expected in candidates for an examination that only professes to test the result of a general liberal education. Where such an appreciation exists, it has been derived, by long study and much thought, from a previous acquaintance with these facts and figures, which, though partly forgotten in detail, have left the impression of their substance and meaning on the mind."

But "cramming" is now generally understood to mean the process, really inseparable from any examination that gives anything like scope to men's abilities, of attempting to acquire as much information as possible, in a short space of time, about certain specified subjects. Where these subjects have been long and carefully studied previously, it is difficult to conceive what objections can be raised to the process of rapidly reducing a mass of crude general knowledge into such a condensed and methodical form that it can readily be produced in answer to questions; and where the subjects are entirely new ones, it can scarcely be denied that the facility of acquiring information, displayed in thus speedily obtaining some insight into strange and presumably difficult branches of learning, is a most valuable attainment, and one that may be turned to important account in any department of the public service.

- ART IV.—1. *Apollonius von Tyana und Christus; oder das Verhältniss des Ppthagoreismus zum Christenthum.* F. C. BAUR. Tübingen.
2. *Philostratus (Flavius).* Opera Scriptorum Græcorum Bibliotheca.
3. *The Life of Apollonius of Tyana.* Translated, with notes and illustrations, by E. BERWICK. London. 1809.
4. *Apollonius of Tyana, the Pagan Christ.* By ALBERT REVILLE, Doctor in Theology and Pastor, Rotterdam. London. 1866.

“SERIOUS arguments,” says Paley, in one of the noblest passages in the English language, “are fair on all sides. Christianity is but ill defended by refusing audience or toleration to the objections of unbelievers. But whilst we would have freedom of inquiry restrained by no laws but those of decency, we are entitled to demand, on behalf of a religion which holds forth to mankind assurances of immortality, that its credit be assailed by no other weapons than those of sober discussion and legitimate reasoning:—That the truth or falsehood of Christianity be never made a topic of raillery, a theme for the exercise of wit or eloquence, or a subject of contention for literary fame and victory—that the cause be tried upon its merits—that all applications to the fancy, passions, or prejudices of the reader, all attempts to preoccupy, ensnare, or perplex his judgment, by any art, influence, or impression whatsoever, extrinsic to the proper grounds and evidence upon which his assent ought to proceed, be rejected from a question which involves in its determination the hopes, the virtue, and the repose of millions—that the controversy be managed on both sides with sincerity; that is, that nothing be produced in the writings of either, contrary to, or beyond, the writer’s own knowledge and persuasion—that objections and difficulties be proposed, from no other motive than an honest and serious desire to obtain satisfaction, or to communicate information which may promote the discovery and progress of truth—that in conformity with this design, everything be stated with integrity, with method, precision, and simplicity; and above all, that whatever is published in opposition to received and beneficial persuasions, be set forth under a form which is likely to invite inquiry and to meet examination. . . . Who can refute a sneer?” Paley illustrated these remarks by a refer-

ence to the great historical work of Gibbon, then recently published—and the history of letters does not afford an illustration more admirably in point; but an equally elaborate, and perhaps still more expressly intentional attempt had been made some little time previously to sneer away the fundamental facts of the Christian revelation. The material used for this purpose was the biography, by Philostratus, of "Apollonius the Tyanean." A French translation of the work was brought out by Castillon in 1779. It professed to have no other aim but to present to the world of intelligence, in the easy garb of a modern language, one of the most curious and instructive records of antiquity. It was accompanied, however, with notes by the famous English sceptic, Charles Blount—notes first published in 1680, but which, in their conception and execution, seemed an anticipation of Voltaire's finest edged and most bitter and cutting irony; and it was introduced with a dedicatory preface to Pope Clement XIV., from the pen, as is alleged, of Frederic of Prussia. The preface was, of course, derisively satirical. Those were the days of young philosophism, when royalty gambolled with the pretty child, and kings made themselves merry over all that had been the strength and stay of kingship; unconscious, as rats gnawing the planks of a ship in mid-sea, that there could be any danger to themselves in the procedure. The drift, both of the preface and the notes, was to suggest that no material difference existed between the miracles of Jesus Christ and those of Apollonius. No formal argument was attempted, but the insinuation was most studiously conveyed that one miracle was as good as another, every miracle being a mere portent or wonder, at which the vulgar stared and wise men smiled.

The time had, in fact, already gone by when it could have been plausibly represented in a regular disquisition that a parallel might be drawn between the Lord Jesus and the philosopher of Tyana. Even in the eighteenth century, criticism had cast so powerful an illumination into the early times of Christianity, and the class of men sufficiently informed to benefit by that illumination had become so great, that no man with a character for scholarship to lose, would have deliberately maintained that what Gibbon incidentally called "the fables related of Apollonius of Tyana," could be set in comparison with the historical accounts of Jesus Christ. In our day even the sneer has all but died away; and it is only in moments of special audacity or forgetfulness that infidels permit themselves to

speaking of Apollonius and Mahomet as figuring, along with the Divine Founder of Christianity, in a class of personages who asserted a claim to work miracles. That such a sneer is still occasionally met with in periodicals of distinction is certainly disgraceful; and the fact that it exerts an influence upon uninformed or unguarded minds, is one reason why the subject may be once more profitably treated; but it is nevertheless true that Apollonius and his history can no longer be classed with those things or persons in connection with which infidels attempt seriously to maintain an argument against Christianity. A change has consequently taken place in the feelings of Christian writers towards Apollonius and his biographer. While it was imagined that the hero of Philostratus could be in any sense a formidable rival to the Lord Jesus, he was detested and dreaded, and no scruple was entertained to blacken his memory. Eusebius represented him as a magician in league with the infernal powers. In 1680, when Blount had published the two first books of his translation of Philostratus, the enterprise was brought suddenly to an end in the apprehension that the hold of Christian religion upon the general mind would be weakened if the publication were completed. Even Cudworth could throw out the hypothesis that Apollonius, who was born about the same time as our Saviour, might be an incarnation of the Spirit of Evil, an anti-Christ specially originated by diabolical agency to be an opponent to the Saviour. All such views are now obsolete. It being conclusively ascertained that infidelity could make nothing of Apollonius, the dust which controversy had raised around the figure of the man was laid, and his true features began to be discerned. In a spirit of calm scientific inquiry, the investigation into his character and history was undertaken afresh. It was found that neither Apollonius himself, nor Philostratus who wrote his life, could be convicted of hostile intentions towards Christianity; and that, in particular, the little which could be known or guessed respecting Apollonius, told to his advantage rather than the reverse. Gradually it became evident that the biography of Philostratus offered many points of view from which the strength of the historical evidences of Christianity might be illustrated; and that, if any controversial use whatever were made of the work of the courtly rhetorician, and of the Apollonius whom he delineated, it would be favourable to the Christian faith. The brief but well-reasoned essay on Apollonius, recently published by Dr. Reville, of Rotterdam, is conceived and written in accordance with this view

of the case; and it is entirely in the feeling that an opportunity is afforded us of bringing into relief one or two of those points in which the transcendent superiority of Christianity to any system of human devising appears, together with a few of those historical characteristics in which the evangelical records contrast most strongly with legendary or mythical narratives, that we enter upon this subject. When a position is taken from an enemy, the next thing to be done is to turn its guns upon his retreating columns.

In the first years of the third century the intellectual world of Europe and of Western Asia was in a state of change and fluctuation. One of the most important revolutions which has taken place in the spiritual history of mankind was in rapid progress. The old Paganism was thoroughly discredited; the fables of the Olympian mythology, which for centuries had been laughed at by men of culture, hardly retained their hold upon the peasant and mechanic. One system of philosophy after another had sprung up and attained celebrity; but no one of the conflicting systems had made good its superiority over the others, or afforded a resting-place to the inquiring and agitated spirit of man. Endless, fruitless disputation, pleasant enough for those whose trade it was, and who got their bread by it, could not but prove unsatisfactory to those who sought in philosophy a means of living nobly, and a permanent basis on which to weave the fleeting interests and activities of time. It was an age of little faith, but of much desire for faith. The old temples of religion, the old porches and halls of philosophy, were visibly in decay; the silence of despair was succeeding to the din of controversy; but multifarious attempts were made to resuscitate the forms of thought which once lent animation to those abodes, or to take here a stone and there a stone from the old structures, and build them into new. Eclecticism and spiritual resurrectionism, the unfailing and infallible symptoms of a time when belief has lost its youthful vigour, its unity, its unconsciousness, were at work on all sides. Many an Hypatia put forth her hand to snatch from the captivating splendours of the old mythology a beauty wherewith to adorn the abstract truths of philosophy. From amid the withered boughs of the different philosophical systems, every spray in which sap yet seemed to flow, and on which green leaf and ruddy fruit still appeared to hang, was carefully gathered, and with these a vain attempt was made to set forth a banquet that might still be fresh and wholesome. The best things of many systems were selected,

in order that there might be some renewal of that enthusiasm with which they had once been singly regarded by their adherents. Idols of Egypt and the East, which, in the heyday of the classical mythology, would have been regarded with contempt, were introduced into Rome, and the hateful rites of Serapis vied with the sun-worship of the Arabian desert in producing a faint glow of sensational devoutness in the degenerate bosoms of the Romans. Among the cults and systems which pleaded for acceptance, none was better adapted to the time than that of Pythagoras. It was partly religious, partly philosophical; it was clothed in a mantle of convenient and imposing obscurity; it enjoined devotional exercises, and respected the popular religion, and yet was too mystical and refined to be quite vulgar; it was very ancient; it favoured a simple and manly style of life, temperance, cleanliness, control of the passions. Revived Pythagoreanism, accordingly, was much in vogue.

Through the working chaos of these agitations, calmly, ceaselessly, irresistibly penetrating the mass with the ordering and tranquillising power of its light; differing, essentially and irreconcilably, from philosophy on the one hand and Pagan mythology on the other; fraught with principles destined to subvert from its foundations the entire edifice of ancient society, and inexorably declining alliance with the eclecticism of the time; Christianity was arising to regenerate the world. Amid the cheap tolerance and loquacious sentimentalism of a faithless and decadent period, it spoke with an authority which demanded entire submission, and, while boundless in its indulgence for the erring, disclaimed intellectual tolerance of anything which lay beyond the limits of the truth. Faith, not disputation, it announced as the method by which the spiritual needs of mankind were to be satisfied; and, if faith required demonstration, it was to be given in life rather than in logic. The procession of martyrs, serene in white robes, passing to the flames—the smiling face of the Christian youth or maiden awaiting the spring of the lions—these were more than dialectic; and, in these, a world which had found in the disputatious zeal of philosophy a mere elaborate process for unlinking the chainwork of man's instinctive moral beliefs, could not but perceive, with growing clearness and impressiveness, an authentication of spiritual realities infinitely more reliable than any other which the time afforded. Definitely and conclusively responding to the highest want of the pure religious consciousness, by its doctrine of the unity and spirituality of God, as preserved, under Divine guidance,

by the great Monotheistic nation of Judæa—supplying, by the more than Hellenic amplitude of its view of humanity and the limitless capacities of its assimilative sympathy, precisely that which Hebraism lacked to make it the religion of the world—bestowing sovereign honour upon the spirit of man by its proclamation of the immortality of the soul, and upon the body of man by its doctrine of the resurrection—Christianity gathered up into a whole of loveliness and of power those scattered members of the body of truth which had given influence to particular systems of philosophy, and, by the potency of its Divine and authoritative syncretism, swallowed up and annihilated the lifeless and bodiless eclecticism of the day. The religion of Jesus had now been in the world for two hundred years; and though its leavening, conquering progress was still but commencing, it was already known to all; a surmise that its might would prove irresistible, was stealing over minds which clung to the mythological or philosophical past; and its essential character, as dependent upon, conditioned by, proceeding from, one Divine-human personality, was generally, though vaguely, apprehended. The centre, the sum, the all in all, of Christianity was felt to be the Christ. The hope that Jesus Christ could be put aside—that ethnicism, whether philosophical or priestly, could overcome and obliterate the influence of the Saviour—had been extensively abandoned by intelligent Pagans. The question remaining to be answered was whether the Christ could be induced to share the homage of mankind with other exalted personages, whether Christians could be weaned from the exclusiveness of their worship, and persuaded to bestow a reverent, an adoring admiration, upon other historical or mythological characters. Among the intelligent persons who believed that a compromise of this kind might still be made, a prominent place was occupied by Julia Domna, empress of Septimius Severus.

Julia Domna, the second wife of the warlike emperor, was the daughter of a priest of the sun, and was brought up in constant contemplation of the rites of sun-worship, in the temple of Emesa, in Cœlesyria. Astrologers had declared, at the birth of the infant, that the position of the celestial bodies assigned her a royal destiny, and her personal merits were such that, according to Gibbon, she “deserved all the stars could promise her.” Beautiful in person, lively in imagination, enthusiastic in temperament, fond of intellectual pursuits, and sound in judgment, she became the centre of a court adorned by all that was most eminent in the literature,

science, and philosophy of the time. "Julia," says Gibbon, "applied herself to letters and philosophy with some success and with the most splendid reputation. She was the patroness of every art, and the friend of every man of genius." The scandalous chronicle of the period accused her of personal immorality of a gross and even an incestuous kind, but Dr. Reville agrees with Bayle in regarding the silence of two contemporary historians, Dion Cassius and Herodian, as conclusive in her vindication. She held court at Rome, about the close of the second century, and among the men of parts and celebrity, in whose conversation she delighted, was Philostratus, the eloquent, ingenious, plausible Lemnian, sophist and rhetorician by profession, inexhaustible purveyor of fine talk and fine sentiment for the empress's evening parties. Philostratus was exactly the man to flourish in an age of eclecticism. Stern inquisition into truth, life and death upon the issue, was not in his way; and he would, naturally, be shocked, though without revealing it more than became a pedant and a fine gentleman, by the exclusive pretensions of Christianity. The empress, for her part, had an inbred reverence for the ancestral sun-worship of her home; a respect, inseparable from her position, for the gods whom the great old Romans and Greeks had honoured; a feeling of interest, semi-tolerance, but by no means sympathy, for the Christian religion; and probably a decided preference for the philosophy of Pythagoras. She heard of Apollonius of Tyana, who was vaguely understood to have died about a hundred years before, and whose reputation as a wise man and beneficent magician was one of the many fancy-tinted mists floating in the intellectual atmosphere of the time. Certain memorials of him existed or were supposed to exist. Damis, the Ninevite, companion of his wanderings had left an account of their travels, and Mæragenes, of Ægæ, where Apollonius resided in his youth, had written something concerning him. Julia Domna took counsel with Philostratus, proposed that he should construct a biography of the hero, and found him exactly the man for the work. Philostratus produced a book of great length and extraordinary interest; a book casting more light than could be done by half-a-dozen histories of battles and diplomatic transactions, upon the character of the period; a book in which, as in a camera obscura, thrown out in vivid distinctness against the general historical darkness of the beginning of the third century, the men of the time, in their thinking and talking, their worshipping and philosophising, their sin-

gular limitation of knowledge and idea, their childish credulity, their general condition of political and religious unrest, move before our eyes. Philostratus intended the Apollonius of his biography for a model of all perfection, a divine man, the highest ideal conceivable by mortals; and, before we inquire into the reliability of the portraiture, it will be instructive and perhaps not unpleasant to commit ourselves with docility to the rhetorical artist, and bid him unveil the statue of his hero.

Apollonius was born in Tyana, a Greek town of Cappadocia. Philostratus has a superb indifference to dates, but this event is supposed to have occurred about the same time as the birth of Christ. Shortly before his birth, Proteus, the Egyptian sea-god or sea-monster—something, as Homer represents him, between a merman and a talking seal—appeared to his mother, and informed her that her child would be an incarnation of himself. From Proteus, Apollonius derived the gift of foreknowledge; but he much excelled his progenitor. The manner of his birth was striking. His mother, warned in a dream, betook herself, along with her maidens, to a meadow to gather flowers. Her attendants dispersed themselves about the meadow; she fell asleep on the grass. As she slumbered a flock of swans formed a chorus around her, clapping their wings "as their custom is," and singing in unison, while the air was fanned by a gentle zephyr. The singing of the birds awoke her, and at that moment she was delivered of her son. In the same instant a thunderbolt which seemed ready to fall on the ground, rose aloft and suddenly disappeared. "By this," says Philostratus, "the gods prefigured, I think, the splendour of the child, his superiority over earthly beings, his intercourse with them, and what he was to do when arrived at manhood." The boy was precocious. His memory was strong, his application steady. The people of the place spoke a rude dialect, but his speech was pure Attic. He was exceedingly beautiful. At fourteen, his higher education commenced at Tarsus under Euthydemus, a celebrated rhetorician. He liked his master; but the townsfolk seemed to him a parcel of fools, preferring fine clothes to philosophical discourses, and wasting their time in sitting like waterfowl on the banks of the Cydnus, which flows through their city. Young Apollonius addressed to them a letter of contemptuous remonstrance, and retired with his master to Ægæ, a town in the neighbourhood, in the vicinity of which was a temple of Æsculapius, where he could enjoy the conversation of the disciples of Plato, Chrysippus, Ari-

stotle, and Epicurus. He now embraced "with an ineffable zeal" the opinions of Pythagoras. He was sixteen years of age, and had already outstripped his masters. He avowed his intention of conforming in all things to the Pythagorean discipline, abstained henceforward from eating anything which had life, and drank water only. Wine he did not altogether despise, but deemed it adverse to a composed state of mind, "by reason of the power it possessed of disturbing the Divine particle of air of which it is formed." With the alteration in his diet corresponded certain alterations in his dress. He went barefooted, clothed himself in linen, rejected the use of garments made from living creatures, and let his hair grow. The officers of the temple were charmed with these marks of superior discernment, and even the god would politely observe to the officiating priest, that there was comfort in performing his cures in the presence of so fine a fellow as Apollonius. The boy appears to have stood in quite a patronising relation to the god. On one occasion, when a man was sent away without cure, because he was a sinner, Apollonius turned towards Æsculapius and said, "You, Æsculapius, exercise a philosophy at once ineffable and becoming yourself, not suffering the wicked to come near thy shrines, even when they bring with them the treasures of India and Sardis; and this prohibition is given from knowing that such supplicants do not sacrifice and burn incense from reverence to the gods, but from the selfish motive of making atonement for their own sins, to which you will never consent from the love you bear to justice." Æsculapius must have been gratified by being thus familiarly patted on the head by a youth of sixteen; and the pleasing confidence with which Philostratus depicts this "Hail fellow well met" intercourse between the god and the pupil, will be probably not without suggestion for the reader, as bearing upon the historical pretensions of the eloquent biographer. At the age of twenty, Apollonius buried his father and divided his inheritance with his elder brother. Some time after he bestowed half his own share on his brother, who was addicted to gambling, drinking, and foppery, and succeeded in reclaiming him. Finding a donative promotive of conversion in this instance, he gave the remainder of his fortune, with reserve only of what was sufficient for the supply of his own wants, to his relatives, and converted them in turn. Philostratus mentions it as a circumstance specially honourable to his hero that he was never in love, though he admits that some have accused Apollonius of spending about this time a year

in Scythia with a view to sowing his wild oats, and taking what Mr. Carlyle calls a mud-bath of profligacy. He now, as a true Pythagorean, entered upon his probationary period of silence, and continued speechless for five years. The discipline was, he confessed, irksome, which, considering the vivacity and volubility of the youth, we can imagine; but it is likely that Æsculapius and others who had enjoyed the benefit of his good advice might take the privation of his remarks with resignation. He did not, however, remain in one place during his silence. He travelled in Pamphylia and Cilicia. When he entered a town which happened to be in a state of insurrectionary uproar, the mere grandeur of his deportment and appealing look, restored tranquillity. We do not fail to recognise here the sweet Roman hand of Philostratus at its work of embellishment, for, as Dr. Newman, in his essay on Apollonius, pertinently observes, "the disciples of the Pythagorean school denied themselves during their silence the intercourse of mixed society."

Having completed his period of probationary silence, Apollonius proceeded to Antioch, and devoted himself to the task of instructing the inhabitants in the doctrines and duties of philosophy. That contempt, however, with which he had previously regarded the people of Tarsus found employment in his new sphere; and he resolved to turn from promiscuous audiences, and seek in temples and retired places a more select and appreciative circle of hearers. "It was not," he said, "the company of illiterate rustics he sought." In his religious exercises he was a Pythagorean and sun-worshipper. "At sunrise he performed apart from all certain ceremonies, which he communicated only to those who had exercised a quadrennial silence." He went from city to city, restoring religious rites to their pristine purity, discoursing upon wisdom, discouraging vice, and both by precept and example enforcing a temperate and manly habit of life. He took daily a cold bath: for "hot baths," he said, "were the old age of men."

Things continued in this train until he was between forty and fifty years of age, when he resolved to travel into the east, and compare his wisdom with that of the famed sages of India. He started, therefore, with two domestics, and speedily arrived at Ninus, a town situated somewhere between Antioch and Zeugma, on the Euphrates. At this place he fell in with Damis, a Ninevite, fond of travel, acquainted with the route between Ninus and Babylon, and disposed to profit by the instructions of such a philosopher

and friend as Apollonius. He informed Apollonius that he was familiar with the languages of the Armenians, Medes, Persians and Cadusians, a circumstance in which Apollonius could take but an abstract interest, seeing that, as he told Damis, he knew them already although he had learnt none of them. Damis put, we presume, money in his purse, filled his writing-horn with ink, and prepared to be henceforward the inseparable attendant of the philosopher. Damis was partly a Sancho Panza, partly a Bozzy; as Apollonius combined with the vagrancy, if not with the enthusiasm, of Don Quixote, a large infusion of the pedantry of Dr. Johnson.

An illustration of the ostentatious sapience of Apollonius is afforded us before we accompany the travellers any considerable length on their journey. Passing into Mesopotamia by the bridge of Zeugma, they were asked by the tax-gatherer what they brought. "I bring with me," said Apollonius, "temperance, justice, continence, fortitude, patience." He named several other virtues, rhetorically personifying them as if they were females. The honest publican, being, as would appear, quite a fool, requested that toll should be paid upon this retinue of damsels. "They are not," quoth the philosopher, "my maidens, but my mistresses;" whereupon the publican, fool as he was, perceived that he was not to have a fee, but a fine sentiment, and that Apollonius meant to say he was under the dominion of those shining virtues. An incident this, we may presume, which never did befall in the annals of terrestrial tax-gathering, but which sprang naturally enough from the invention of this solemn wiseacre, cultivating noble sentiment at the court of Julia Domna. In Mesopotamia, the country lying between the Tigris and the Euphrates, the friends wandered up and down for some time; and Apollonius availed himself of the opportunity of converse with the Arabians, to make himself master of the language of beasts and birds. The Arabians are "of all people best versed in its theory and practice," a talent which is obtained, "according to some, by their feeding on the heart, and according to others, on the livers of dragons."

They now entered the territories of Babylon, and were met by the king's guard, sharply interrogated by the officer in command, and carried before the satrap. This functionary was at first disposed to treat them with severity; the philosophically innocent but vernacularly alarming statement of Apollonius, that the whole earth was his, and that he might go where he pleased in it, suggested to the untutored mind of the Babylonian that some secret meaning

might lie hid under the words which it would be well to elicit by torture. Descending, however, from his rhetorical stilts, and informing the man who he was, Apollonius received a cordial welcome, and was forwarded on his journey to Babylon.

An incident occurred on the way which gave occasion for a fine exhibition of the wisdom of Apollonius. Proceeding about twenty stadia, the travellers lighted on a lioness just killed in the chase, which was one of the largest ever seen in these parts. When the lioness was opened, she was found to contain eight young ones. Said Apollonius: "O, Damis, the time we are to stay with the king will be just a year and eight months. He will not suffer us to go sooner; and I do not think it would be proper for us to depart before the expiration of that period; as the number of the months may be conjectured from that of the young, and the year from the mother, for things perfect in themselves can be only compared with what are perfect." Damis objects that Calchas, a diviner mentioned in Homer, foretold, from the eating of eight sparrows and their mother by a serpent, that the War of Troy would last nine days. Why leave the mother out of the present calculation? "Homer," replied the sage, "compared the young of the sparrow to years; and he did so because they were born and in possession of life; but in the case before us, the young are imperfect, unborn, and perhaps would never have seen the light; and why should I compare them to years? for the irregular productions of nature are not easily brought forth, and if they are they soon perish." Readers must not blame us for quoting this on the ground that it is trash; for, though it is palpable, it is but fair that our description of the lauded wisdom of Apollonius should not be made to supersede the actual teaching of the sage.

The arrival of Apollonius and Damis at Babylon is the signal to Philostratus for an ornate and elaborate description of the city. It was built within a circumference of four hundred and eighty stadia; its walls were about one hundred and fifty feet high; its royal mansions were covered with brass; the apartments and porticoes were adorned, some with silver, some with golden tapestry, some with beaten gold in place of pictures. One of the chambers seems to have furnished a model for the reading-room at the British Museum; for its "ceiling was arched in the form of the heavens, and covered with sapphire, a stone of an azure colour, resembling the sky." Apollonius, however, was too much of a philosopher to care for things like these, and passed through them talking of more indifferent matters.

The first time he approached the king, his majesty was engaged in sacrificing a white horse to the sun. Apollonius could have no part in the shedding of blood, but he took frankincense in his hand, and uttered these words, "O, sun! conduct me to whatever part of the world it may seem good to you and me; and grant me only to know the virtuous; but as to the wicked, I wish neither to know them, nor to be known by them." He then threw the frankincense into the fire, observing how the smoke rose, and curled, and shot into spiral forms, and exclaimed, "O king! do you continue to sacrifice after the ceremonies of your own country; for my part I have observed what belongs to mine." He then withdrew, being determined that he should not be made partaker in the shedding of blood.

Apollonius favoured the king with a brief and compendious confession of his faith. The wisdom he professed was, he said, that of Pythagoras, from whom he had learned to discern the several natures of the gods so as to be able to offer them appropriate worship, to abstain from food and clothing derived from animals, and to let his hair grow. Not even with the king could he indulge in the gratifications of the table; but to make up for his defect in good fellowship, "I promise," he said, "to free you from perplexity or vexatious cares; for I not only know, but foreknow what is to be."

On becoming aware of the character and ability of his guest, the king set no bounds to his hospitality. He offered Apollonius apartments in the palace, which, however, were sensibly declined. His majesty urged the philosopher to accept handsome presents. Damis, who was not so high-flying in his notions as his friend, argued strongly in favour of acceptance. Apollonius, however, read him a long lecture, pointing out that his reputation as a philosopher would be gone at once if he yielded to the love of money. "But perhaps," he added, "you think, Damis, that committing a fault at Babylon is not the same as committing one at Athens, or Olympia, or Delphi; and do not consider that every palace is Greece to a wise man, who esteems no place desert or barbarous, whilst he lives under the eyes of virtue, whose regards are extended to but very few men, and who looks on such with a hundred eyes." Damis was convinced, and left Apollonius to deal with the ten boons which the king offered him as he chose. The philosopher declared that there was one which he would accept, and pleaded for certain privileges on behalf of the Eretrians, whom, on his journey, he had discovered to be in a state of misery and peril.

The king granted his request, and asked him to proceed to nine boons which remained. He had nothing further to ask. "Is there nothing," said his majesty, "of which you stand in need yourself?" "Nothing," replied the sage, "but some fruit and bread, which make me a most sumptuous repast."

Pushing still eastward, the travellers now cross the Caucasus, though it is difficult to see how this range of mountains, which lies geographically at least a thousand miles to the north-east, could have barred their access to India. Not only, however, did they cross it, but Damis saw the chains by which Prometheus had been fixed to the rock. The particular species of metal used for the purpose, this cautious and exact observer could not undertake to describe. In the solitudes of the mountains, Apollonius conversed on the relative advantages of hills and plains, viewed as situations on which to pursue the study of Divine things. Damis thinks that the point of elevation is of small importance, and Apollonius confirms him in this opinion. "In what manner a supreme being superintends the human race,"—this is the summing up of Apollonius—"and how he delights to be worshipped; what virtue, justice, temperance are; neither will Athos shew to those who climb its summit, nor Olympus, so renowned in song, if the soul does not make such discussions the objects of its contemplation; and if it does engage in such topics pure and undefiled, I will not hesitate to assert that it will rise far above Caucasus itself." This is sensible enough—not superhuman; and above this level of judicious common-place, our paragon of wisdom really does not ascend.

On the further side of Caucasus they had much intercourse with Phraotes, another monarch who cultivated philosophy. Phraotes and Apollonius had much discourse, generally of a childish description, on dreams, divination, water-drinking, and so forth. In one instance the wise man was able to give the king a useful hint in a practical emergency. His majesty was troubled with a difficulty in the administration of justice. A piece of ground had been sold; soon after, a treasure was found in it; the seller claimed the gold—the buyer refused to give it up. The former declared that he would never have sold the land for the money received for it, had he known the treasure was there. The latter said he bought the field and all it contained. "In my opinion," quoth the king, taking counsel of Apollonius, "the plea of both is reasonable; and yet, were I to advise them to divide the money, I should not be considered as a very subtle lawyer, inasmuch as such a decision might

be made by any old woman." What would a philosopher and friend advise? "I perceive plainly," said Apollonius, "that these two men are no philosophers, by the manner they wrangle about the gold. But you, O king! will judge the matter most equitably by taking into consideration, first, that the gods have especial care of those men who excel in philosophy; and next, that their care extends to all who are free from vice, and least disposed to evil. To philosophers they give the power of discerning between divine and human things; and to other men of good characters, such a competency of the necessities of life as may keep them from doing anything unjust to acquire them. I think then, O king, that the behaviour of both should be weighed as in a balance, and the life and action of each well examined; for my opinion is, the gods would never have taken the land from the one had he not been a bad man, nor given it to the other had he not been a good one." The next day both came to plead their cause; and it appeared that the seller was a man who despised the sacrifices due to the terrestrial gods, and the other, one who did not, but was a devout worshipper of them. The opinion given by Apollonius determined the case, and the good man departed under conviction that he was favoured by heaven. This little narrative proves very conclusively two things; first, that Apollonius had, like his contemporaries, a loose general belief in a multiplicity of gods; secondly, that Apollonius could, on occasion, speak very decided nonsense.

Leaving Phraotes, and proceeding eastward, they found that a world of wonders opened upon them. It was when they reached the Hyphasis, which may be imagined as one of the five rivers of the Punjab, that the marvels thickened. Space would fail us to do justice to the fish with blue fins, spotted scales, and yellow tails; the insect which produces a flame that burns down the battlements of besieged cities; the horn-cup, from which he who drinks is not sick for a day, nor sensible of pain if wounded, nor affected by fire, nor injured by poison; the dwarf-woman, black from head to bosom, white from bosom to foot; the pepper-cultivating apes; the dragons thirty cubits long, or fiery-red, with eyes like stones of fire, possessing a virtue powerful in the discovery of secrets. At last they arrived at the hill where dwelt the famed sages of India. It was defended on all sides by an immense pile of rocks, on which might be observed traces of cloven feet, of beards, of faces. Bacchus and Hercules had once attacked the place with an army of Pans. These made the assault;

but "thunderstruck by the superior skill of the sages, they tumbled one upon another, and left imprinted on the rocks the marks of whatever were most defective in their bodies." A cloud covered the hill, by means of which the sages could make themselves invisible at pleasure. As Apollonius climbed the mountain, he saw a miraculous well, "the well of discovery;" a crater of fire, "the fire of pardon;" two black vessels, the one containing wind, the other rain. The sages dispense wind and rain to the surrounding region. On the top of the hill the natives "worship fire, which they boast of drawing down from the rays of the sun, and sing hymns in honour of him every day at noon." This is but a sample of the wonders beheld, but we daresay it is enough. Iarchas, the chief of the wise men, informed Apollonius that he had brought with him a letter of introduction, from which the letter D happened to be in one place omitted, and proceeded to give him a minute account of his family, and of what had passed at *Ægæ*, many years before. Apollonius felt that this was a wise man with a vengeance. He asked these astonishing people what they thought of themselves. Iarchas replied, "We are gods." "Why gods?" said Apollonius. "Because we are good men," was the answer. "Which," adds Philostratus, "Apollonius considered so replete with wisdom, that he afterwards used it as his apology to Domitian." That all good men are gods was a principal tenet in the creed of Apollonius. Enough now of the sages of India, among whose gifts, we may mention, was one which anticipated the power possessed by Mr. Home, the spirit-rapper, of floating about in the air.

Returning from India, Apollonius was preceded by his fame. Wherever he came labour was suspended, and men flocked to behold this incarnation of wisdom. Oracles bore testimony to his preternatural endowments. Ephesus was peculiarly favoured by his teaching, and here he performed one of his most eminent miracles. The city was being desolated by the plague, the citizens implored him for relief, and the mode he adopted of removing the infection was to order a poor harmless beggar to be stoned to death. The atrocity seemed, at first, too horrible to be perpetrated even by the alarmed and credulous multitude, but Apollonius hounded them on, and the wretched creature was murdered.

Among the feats of exorcism which he performed at this time, one has become remarkable by attracting the attention of a genius, compared with whose artistic touch the most elaborate rhetoric of Philostratus was but paltry daubing. Menippus Lycius met

a fair woman between Cenchreæ and Corinth, fell in love with her, paid assiduous court, in her splendid mansion, in Corinth, and invited his friends, Apollonius among the number, to a marriage-banquet in her house. They came, everything promised well, the rooms were magnificent, the choicest delicacies of the season graced the feast, when, at a critical moment, the cold piercing eye of the philosopher fixed its gaze on that of the lady, convicted her of being an Empusa, Lamia, or Serpent-woman, and caused the whole affair, house, furniture, viands, down to the very cooks, to vanish into thinnest air. This wild, repulsive legend came in the way of Keats. He perceived in it materials fitted to the action of his genius. He dipped it in an atmosphere of moonlight and romance, brought all its rudeness into exquisite proportion, arrayed it in soft, delicately brilliant colours, unfolded its beauty to a rich flute-melody of delicious rhythm, and inscribing it with the name "Lamia," added it to the literature of his country as by far the finest example of elaborately-fanciful, half-earnest, half-playful delineation in the English language.

Having seen the extreme East, Apollonius now turned towards Europe and the West. He proceeded to Rome, was prosecuted by Tigellinus, the agent of Nero, miraculously erased his indictment from the parchment scroll containing it, was pronounced by Tigellinus, on this account, more than human, and escaped. While in Rome he raised from the dead a young girl of noble family, who was being carried to her grave. Expelled the city, in virtue of Nero's decree against philosophers, he visited Spain, Africa, Sicily, and Greece, and, after the death of Nero, proceeded to Alexandria and attached himself to Vespasian. He had already begun to take an active interest in political affairs, and bore a part in several of the conspiracies of the time. He detested a cruel and besotted tyranny like that of Nero or that of Domitian, but he distrusted the multitude, and thought that the best form of government was that of a wise and benevolent despot. Vespasian honoured him so highly that a feeling of bitter jealousy arose in the mind of Euphrates, a counsellor, who also stood high in the favour of Vespasian. For this reason the memory of Euphrates is industriously blackened by Philostratus. After the accession of Domitian, whom Apollonius vehemently opposed, the latter got again into trouble. He attempted to organise an insurrection in the cities of Asia Minor, but was arrested in the work by a summons to Rome. He voluntarily obeyed the summons, arrived in the city, was

thrown into prison, and brought to trial as one who affected singularity in dress, was a religious impostor, and was the occasion of excitement among the people. His surrender had been spontaneous; his rescue was miraculous. Having first shown Damis, in prison, that he could take his feet out of the fetters, and replace them, like a modern Davenport brother, he dismissed that worthy to Puteoli, about one hundred and fifty miles from Rome, to await what might betide. At noon he vanished from before the eyes of his judges; in the course of the afternoon he appeared to Damis at Puteoli. "Are you alive?" exclaimed the disciple. He invited Damis to touch him. Damis did so, was convinced, and believed henceforward that Apollonius was more than human. On his return to Asia Minor he proclaimed, in Ephesus, the death of Domitian, by an assassin, at the moment it was taking place. His own disappearance from the world occurred soon after. As he passed outwards through the gates of a temple, the voices of young girls were heard singing in the air, inviting the philosopher to "leave the earth and come to heaven." He was never again seen except in the character of one revisiting the glimpses of the moon from the regions of the dead. In order to convince a youthful sceptic that he still lived, he reappeared in a vision shortly after his departure. He had been on earth for about one hundred years.

We have done no more than touch, in a very cursory manner, upon the principal features in the life-length portrait painted by Philostratus, and we have been studious to bring out such points as might tell favourably for Apollonius. But we think that upon neither of the questions which now arise—first, whether the work of Philostratus is credible as a biography; second, whether the Apollonius of Philostratus admits of any comparison, however remote, with the Lord Jesus—can much doubt remain in the mind of the reader. As a biography it has not even a discoverable groundwork of fact. From first to last it is a romance. Whether the materials from which Philostratus professes to have constructed his narrative possessed any historical value cannot now be ascertained. The wrappings of the sophist and rhetorician have extinguished what slight life-breath of reality they might contain, as the burden of lace and jewellery has sometimes stifled the infant at a royal christening. It evidently never occurred to Philostratus to make strict inquisition into the life of Apollonius, or to admit no fact into his biography which he had not subjected to critical scrutiny. He wanted to construct a taking and brilliant book, and whatever con-

tributed to that result, whether it was the ocular attestation by Damis of the binding of Prometheus on Mount Caucasus, or the bottling up of wind and rain by the Indian sages, down it went upon the pictured page. An imaginary geography and topography—an impossible Caucasus and a Babylon of the brain—were no difficulty for Philostratus. Of the political history of the time, and the reputations of well-known men, Euphrates for example, he made very wild work, if required to do so for the embellishment of his narrative or the exaltation of his hero. The account of the journey to the East is as visionary as any story in the Arabian Nights' Entertainments; the proceedings of Apollonius in the West—his importance as a political conspirator, his intercourse with emperors—are disproved by the fact that they are never alluded to by contemporary historians. Ferdinand Baur, in his masterly treatise on Apollonius, decides absolutely against the historical pretensions of Philostratus, basing his judgment mainly upon the circumstance that he makes his hero for many years a public character, while he is totally unknown to those writers who made it their business to chronicle public events at the time. "The philosopher," says one who sums up briefly the argument of Baur, "who in the reign of Nero had been the observed of all observers in the first city of the empire, the promoter of the conspiracy of Vindex, the counsellor of Vespasian, the correspondent of Titus, the rebellious opponent of Domitian, and the supporter of the pretensions of Nerva would, surely, not have been wholly unnoticed by the reflective Tacitus, or the gossiping Suetonius. In the case of Euphrates, the false friend and traitor of the story, the misrepresentation of Philostratus admits of a direct exposure. Euphrates happens to be an historical character. Epictetus praises his eloquence, and signalises his philosophical sincerity; and Pliny the younger, an intimate personal acquaintance, celebrates both his wisdom and virtue in an interesting letter addressed to Attius Clemens." It is unnecessary to insist further upon this point. That the work of Philostratus is a romance is now admitted on all hands. The critical intellect of this age penetrates its character at a glance. And not the least of the valuable properties of the book is that it exhibits with astonishing practical force the unscientific, vaguely fanciful, childishly credulous, and fantastically superstitious character of the age in which it was composed. The historical Apollonius may be considered as good as lost. The miniature likeness, probably derivable from a judicious and skilful use of the materials possessed by Philostratus, has retained

no traceable feature when spread by the rhetorical artist over half-an-acre of illuminated glass. It is certain, or nearly so, that a man of this name lived in the first century, and it is likely that he was a harmless kind of person, given to peripatetic lecturing, philosophising, dreaming of dreams, and divining of divinations. His Pythagorean asceticism, and a spiritual enthusiasm, strong enough to raise him above the ruder vices and the love of money, not strong enough to raise him above vanity, may be pretty safely taken for granted. That it never entered his head to consider himself a divine man is quite sure.

It may be deemed rather wonderful that Philostratus, working with all the appliances at the command of one well versed in the philosophies of antiquity, and, what is far more important, with the Christian Gospels in his hands, should not have succeeded in realising something more respectable in the way of ideal man, and rival Messiah, than the Apollonius of his biography. On any theory the latter comes out a poor affair. A prevailing self-consciousness precludes the very possibility of his seeming great. He is dreadfully formal, pedantic, long-winded. Five-sixths of his discourse are the flattest common-place, and the remainder consists either of sheer nonsense or of tolerably shrewd and pertinent remark. His actions correspond, sometimes generous and well-considered, sometimes affected and coxcombical, sometimes cruel and atrocious. He is slave to some of the worst superstitions of his time, prides himself on his skill in divination and in interpreting the language of animals, is haunted with the notion that people are possessed with devils, and attaches immense importance to a vegetable diet and, linen garments. He has no precise or coherent system of opinion; he talks, sometimes, the language of Polytheism, sometimes of Pantheism, and appears to be unacquainted with the abstruser portions even of that Pythagorean system which he lauds to the skies. Pagan philosophy and Pagan mythology, at the time when they were specially striving to idealise and elevate themselves, might really have produced a better Christ than this.

The miracles, so-called, of Apollonius require little further discussion. They are totally unproved as mere facts, and if they had some kind of truth as matter of fact, they would have no religious significance. "They did not," observes Dr. Newman, "profess to be miracles in the proper meaning of the word, that is, *evident exceptions* to the laws of nature. At the utmost they do but exemplify the aphorism 'Knowledge is power.' Such as are within the range of human

knowledge are no *miracles*. Those of them, on the contrary, which are beyond it, will be found, on inspection, to be unintelligible, and to convey no *evidence*. The prediction of an earthquake (for instance) is not necessarily superhuman. An interpretation of the discourse of birds can never be verified. In understanding languages, knowing future events, discovering the purposes of others, recognising human souls when enclosed in new bodies, Apollonius merely professes extreme penetration and extraordinary acquaintance with nature. The spell by which he evokes spirits, and exorcises demons, implies the mere possession of a secret; and, so perfectly is his biographer aware of this, as almost to doubt the resuscitation of the Roman damsel, the only decisive miracle of them all, *on the ground of its being supernatural*, insinuating, that perhaps she was dead only in appearance." The same writer pertinently remarks that, in the letters imputed with doubtfulness to Apollonius, "we meet with no claim to extraordinary power." The Indian sages, as we saw, were still more expert than their Tyanæan brother in the performance of prodigies. They declared themselves to be gods in virtue of being good men, and if Philostratus had attempted to frame any theory accounting for the wonder-working power of Apollonius, he would have pronounced it a natural consequence of his being a superlatively good man, and therefore a god. The very highest moral elevation attained by Apollonius is that of Pantheism. Believing a good man to be a god, he has genuine sympathy with honourable and masculine sentiments, and though Philostratus preposterously exaggerates the matter, it is not unlikely that he may have offered some opposition to Nero and Domitian more practical and manly than philosophers generally throw in the way of tyrants. It is hardly necessary to add that a large proportion of the miracles mentioned by Philostratus are childish and absurd. In point of fact, those only which have been modelled upon the wonderful works related in the evangelical narratives are characterised by rationality or dignity.

The Apollonius of Philostratus is a genuinely mythical personage; and, by viewing the account we have of Christ in the Four Gospels in connection with the biography of Philostratus, we are vividly impressed with the difference between history and legend, and with the wisdom and bounty of Providence in securing for the sublime facts on which the Christian faith reposes, precisely those means of transmission to future ages which were used for that purpose. Had human wisdom arranged the matter, is it not certain that some one man,

deemed specially competent, some Christian Philostratus of ready pen and fertile imagination, would have been employed to work up the Four Gospels which we possess into one elaborate biography of the Saviour? And is it not certain that, if the originals had been lost, criticism would have denied this compilation, on the ground that it consisted of mere hearsay evidence, authority insufficient to establish any extraordinary or very important fact? Criticism has now put it almost beyond dispute that the latest of the Gospels was composed within forty or fifty years after the death of Christ. One of those Gospels, though containing certain facts, and these of high importance, peculiar to itself, is in some measure a Divine commentary upon, and inference from, the others. The synoptics consist, as is now the almost unanimous judgment of critics, of the *ipsissima verba* of the Apostolic preaching. They are the absolutely correct reflexion of that Gospel which was orally delivered to the churches of Jerusalem and Antioch, and which originated in the very words and deeds of Christ. The state of the Jewish nation for centuries—their reverent observance of the law and exact recollection of its requirements—fitted them, with marvellous completeness of preparation, to retain in memory the exact words of a religious teacher. The most intense historical accuracy is thus attained, and it is, accordingly, fast becoming one of those propositions on which doubt is no longer possible, that in respect of historical reliability, the Four Gospels belong to the very highest order of human compositions. This is the verdict received at the bar of criticism, and, apart from any question of inspiration, it leaves the world without excuse in rejecting the Christian testimony to the supernatural powers and Divine mission of Christ.

But the most wonderful circumstance in connection with this whole subject is that infidelity should have fallen into the mistake of attempting to derive from the history of Apollonius, as detailed by Philostratus, an argument against the exclusive Divinity of Jesus Christ. We return to the point whence we set out, and muse with Paley in sad amazement on the perversity and frivolity which would compare Jesus with such an one as Apollonius. Were it but the sublime earnestness of all the utterances of the Saviour, an earnestness pervading the whole revelation of God from Sinai to Calvary, there would be enough to put an infinite distance between Him and the prosing pedant of the sophist's romance. Not one of those grand elements for which we must look in every system of religion, even plausibly recommended to our

consideration, is afforded us in the teaching of Apollonius. He has no tenable or rational doctrine of the Divine nature, none of creation, none of virtue, none of redemption. The aristocracy of antiquity clings inseparably to the man and his work ; he turns from the poor and uneducated, and looks for an audience of philosophers or blue-stockings. Of sin and atonement there is no conception in his system. Not only does he bring no healing to humanity,—he has no idea of the death-wound that it carries in its heart. F. C. Baur distinctly and forcibly alleges that this characteristic alone—the absence of any just view of sin and reconciliation—suffices to open an impassable gulf between Apollonianism and Christianity. Serious argument is in fact, as we said, out of the question upon this matter, but Christians have a right to be angry at having been called upon to discuss it. They have a right to spurn with indignant contempt the insolent frivolity which would institute a comparison between the Divine Founder of Christianity and the waxwork sage of Philostratus. It is needless to lift our eyes to those heavens on heavens of spirituality which Christ opened up above the world of human life,—needless to refer to the infallible cure for all ills, relief for all woes, supply of all wants, afforded to mankind by the Divine Healer,—needless to speak of that communion, in fellowship with angels and archangels, in blessedness of eternal light, in melody of immortal love, of the soul of man with its God, which is Christ's final solution of the enigma of human destiny. We have but to look upon the first broad aspects of the Saviour's work,—we have but to contemplate in most meagre outline what, by His life and His death, He did for mankind,—we have but to cast a glance over Christian civilization, of which His impulse was the origin and power, of which His religion is the vital breath, to be forced to experience a thrill of shame and distress, to hang the head for poor, mean, heartless, ungracious, ungrateful human nature, at the thought that men could have been found to put side by side Apollonius of Tyana and Jesus of Nazareth.

- ART. V.—1. *The Lake Dwellings of Switzerland and other Parts of Europe*. By Dr. FERDINAND KELLER, President of the Antiquarian Association of Zürich. Translated and Arranged by JOHN EDWARD LEE, Author of "Isca Silurum," &c. London: Longmans. 1866.
2. *Habitations Lacustres des Temps Anciens et Modernes*. Par FREDERIC TROYON. Lausanne: Georges Bridel. 1860.
3. *Pre-Historic Times, as Illustrated by Ancient Remains and the Manners and Customs of Modern Savages*. By JOHN LUBBOCK. London: Williams and Norgate. 1865.
4. *The Geological Evidences of the Antiquity of Man*. By Sir CHARLES LYELL. London: Murray. 1863.

As might be expected, the scientific spirit of the age is zealous in its efforts to track out the beginnings and primordial life of man on the earth. The same enthusiasm of research, which leaves the chemist and metaphysician dissatisfied unless they can reach the bottom of things material and spiritual, takes hold of the student of human nature. Some three or four thousand years back we find ourselves on the dubious frontier of the oldest secular history. Races, we hardly know what, are coming out of cradles, we hardly know where, and are assuming vague forms of political consistence and activity. A few steps further away in time, and the frontier is completely passed—we are moving among ghosts and shadows. Then the thick night soon follows, and the most vivid dreamer can see nothing but nothing. Indeed with respect to by far the largest proportion of the peopled area of the globe, a dozen or twenty centuries backward suffice to land us in a pre-historic antiquity, where the best lanterns which ethnology, language, and legend have hitherto been able to furnish, do little more than show how utter is the darkness.

It is neither likely nor desirable that science should sit down contentedly under such a condition of things. If inquiry be legitimate anywhere, or anywhere tend to noble and serviceable issues, that will surely be the case, when the question is one so vast and yet so near to us as man—his birthplace; the home of his youth; his first migrations and settlements; the multifarious fortunes which befell him before history began; the processes by which he came to be personally and socially what he was as he first appears in

Western Asia and Egypt, in Tartary and Scandinavia, in the Americas and in the Islands of the Southern Ocean. And, as matter of fact, for some years past scientific men of both hemispheres have evinced a growing interest in this obscure but most attractive province of antiquarian and philosophical investigation. No doubt the geographical discoveries of the last century did much to call attention to the race distinctions, and primeval history of man. The labours of modern missionaries, too, have prodigiously enlarged the sphere of our knowledge on these points, and have stimulated and sustained a spirit of inquiry into the unknown past of human life. The like effect has been produced by the marvellous revelations, which Assyria, Babylonia, Mexico, and other countries of the old or new world have recently given us of "kindreds, and nations, and peoples, and tongues," whose life had previously been either a cypher or a name. Moreover, the steady advance and ever strengthening fascination of a strictly inductive geology has at once kindled new lights in the ancestral darkness of man's career on the earth, and has awakened an irrepressible curiosity and purpose in multitudes of minds to acquaint themselves, so far as may be, with the facts which the finger of science thus marks and points to. To crown all, the purely scientific interest in prehistoric man, which causes such as those now named have either created or confirmed, has of late, particularly, been linked with a religious feeling, which has intensified it for good or evil a hundred-fold. The cosmogony and chronology of Holy Scripture have been supposed to look unfavourably upon what are affirmed to be the plain and straightforward readings of the newly-discovered scientific phenomena; and this circumstance has invested the phenomena themselves with a more than scientific importance, and has added indefinitely to the zest with which the physicists and *sarans* have prosecuted their researches. According to the views which men have taken of the interpretation and authority of the Bible, they have looked with hope or alarm to the findings of the geologist and antiquary; and a keen-sighted, religious jealousy has stood by while busy hands have explored the mysteries of cairns and cists, of barrows and bone caves, of prehistoric dead men's skulls, and of ancient remains of human industry buried in water or in earth.

If the man of science is disposed to complain of all this, let him remember that the blame lies partly at the door of the rashness and flippancy of some of his own class; that the interests which hang upon the credit of the Sacred

Volume are such as may very well excuse even a passionate clinging to what is believed to be its testimony; and that the exactness and caution demanded by religious faith at the hands of science on ground which justly belongs to both, will really promote the interests of science itself, and will help to bring about that final accord between history, nature, and the Scripture revelation, of which all true knowledge is the sure herald and earnest. Whatever the philosophy of the fact may be, it is certain that a wide-spread, keen, and constantly augmenting interest is gathered, in the present day, about those many and various monuments of the pre-historic part of man's life on the globe, which modern science is everywhere dragging from their sepulchres, and by means of which it seeks to recompose the forgotten annals of our race.

The focus of the interest in question has undoubtedly been those mysterious flint implements, which the geologists have discovered in so great numbers, and in so great a variety of circumstances, in different parts of the world, especially such of these implements as have been found buried in ancient river gravels, and in the stalagmitic floors of osseous caverns of the mountain limestone and other rock formations. Second only, however, to the importance of the chipped and trimmed flints, in the feeling of the scientific world, has been a most unlooked-for series of discoveries made within the last few years, and still making, in Switzerland—discoveries which show, that in times antecedent to the known history of that country, the margins of very many of its lakes were tenanted by a people or peoples, who lived not on the shores of the lakes, but in houses built on piles driven into their water-beds; and whose personal and social habits and condition are, in not a few cases, brought clearly to view by innumerable remains of their dwellings, dress, food, utensils, weapons, &c., which have rewarded the search of a crowd of eager explorers.

The first account of these Swiss lake dwellings, presented to the scientific world with anything like pretension to combined detail and completeness, was that given in M. Troyon's elegant volume, entitled, *Habitations Lacustres*, which was written in French, and published at Lausanne in 1860. Prior to this date, however, Dr. Ferdinand Keller, President of the Antiquarian Association of Zürich, and the original discoverer of the lake dwellings, had begun to issue in German, under the auspices of his society, what is now, on the Continent at least, a well-known series of reports on these

extraordinary antiquities. On this side of the water, Dr. Keller's publications were not likely to make their way into the hands of more than a few readers; and what Englishmen knew of his topic, they learned either from M. Troyon's work, or from the comparatively brief descriptions of the lake dwellings and their appurtenances, furnished by Sir John Lubbock and Sir Charles Lyell.

Under these circumstances, Mr. Lee was led to entertain the idea of translating, rearranging, and putting into a shape fitted for the use of Englishmen, the whole contents of Dr. Keller's reports. He rightly believed that such a work would be acceptable and useful to his countrymen; and, in the noble and thoroughly English book, the title of which heads this article, we have the praiseworthy results of his laborious and judicious editing of his originals. In accordance with his plan, Mr. Lee has not simply translated Dr. Keller's reports in the order in which they were given to the public. To use his own words—"The order is entirely different . . . the substance remains, though the mode of stating it is altered . . . in most cases the language and expressions are the same translated into English. Some few things have, under his (Dr. Keller's) direction, been omitted, and several additions have been made by him. In a few instances I have added notes of my own: my province, however, was not to illustrate but to translate; and, as these few notes rest on my own authority alone, they are marked at foot with the letters *Tr.*" The value of Mr. Lee's volume is greatly enhanced by nearly a hundred carefully-executed lithographic plates, illustrating the construction of the lake dwellings, and the objects of art found buried in the wreck of them. On this subject the translator writes:—

"With respect to the plates, it may be well to mention, that about one-half are actual 'transfers' (re-arranged in the octavo form) from plates drawn at Zürich, either for the last report, or for the previous ones. Another considerable portion consists of copies, either by myself or my friends, from the other plates of the Zürich reports; while a smaller portion, including the sketches of localities, were drawn by myself from nature, or from the objects themselves, during a visit to Switzerland last summer."—*Preface*, p. vi.

Prefixed to the volume as frontispiece, is an "Ideal Restoration of a Lake Dwelling." This is not the often-copied "Restoration" which appeared in Dr. Keller's first report, but a new drawing made at Dr. Keller's suggestion, "in accordance with the latest discoveries," and approved by him before it finally left the hands of the lithographer. If

the plate has something of the dimness of dreamland about it, this will be easily excused by those who consider how unscientific it would be to give a sharp-lined reality to things only just emerging from the airy sphere of fancy and mythical song.

The story of the first discovery of the Swiss Lake Dwellings is pretty familiar. "In the winter of the years 1853 and 1854, the extraordinary drought and long-continued cold occasioned a very unusual phenomenon in the Alpine districts. The rivers shrank to their smallest compass, and the level of the lakes was lower than ever had been known before. On the stone of Stäfa the watermark of 1674 had always been considered the lowest known in history, but in 1853-4 the water was one foot below this mark." This circumstance of the extreme lowness of the water of the lakes led to the adoption of measures, in certain cases, for the recovery of land on their shores; and while this was being done in the little bay between Ober Meilen and Dollikon, on the east side of the Lake of Zürich, the workmen, to their astonishment, lighted upon the heads of wooden piles, with stags' horns, and sundry implements, all sunk in the bed of the lake, and indicating, to appearance, the former occupation of the spot as the residence of man." This was in January, 1854. The Antiquarian Association at Zürich was immediately informed of what had occurred, and took steps without delay to secure to science the full advantage of the discovery. The proprietors of the land at Ober Meilen were forward to co-operate with the *savans*. As the excavations proceeded, the importance of the discovery became more and more manifest. Plainly human beings of a prehistoric age had lived in houses built on the tops of these piles; for here were the visible, tangible relics of the timbers that had formed or supported their huts, of their hearth-plates, their corn-crushers, their pottery, the creatures they had fed upon, and a multitude of other objects, connected with their personal habits, or social condition and manner of life.

No sooner was public attention drawn to the antiquities thus unexpectedly brought to light on the Zürich lake, than remains of the same class began to reveal themselves in other parts of Switzerland. Before the close of the year 1854, relics of pile buildings were found in the Lake of Bienne, the Lake of Neuchâtel, the Lake of Geneva, and elsewhere. And between this date and the present time the margins of nearly all the lakes in the north-east, north, and west, of the country, have yielded the like harvest to the labours of antiquarian

research. In the extreme north-east, the Ueberlinger See, and Unter See, the two great forks of the Lake of Constance, are "thickly studded with settlements;" some of them, like those of Nussdorf, Maurach, Unteruhldigen, and Sipplingen, on the former water, remarkable at once for "their extent, and the number of the antiquities found in them." To the south of the Unter See, and lying between it and the Lake of Zürich, the Lakes Nussbaum, Pfäffikon, Greiffensee, and others, have all furnished remains of ancient lake dwellings. Robenhausen, "situated on the great moor on the southern side of the Lake of Pfäffikon," is one of the most curious and interesting of all the monuments of its order. The Zürich Lake has not hitherto added much to its original honours as the father of our knowledge of the Swiss lake dwellings. Some five or six such dwellings have been discovered on the borders of the Lake of Zug, south-west of that of Zürich. Further west, the Lakes of Baldegg and Sempach, both in the Canton of Lucerne, have rewarded the explorations of Colonel Schwab with proof of the former existence of some dozen or more settlements upon their banks or water-margins. The little lakes of Mauensee and Wauwyl, near the Sempach Lake, have likewise contributed something to the list of the north-central lake dwellings. "The Lake of Moosseedorf, distant about two hours' walk from Bern, belongs, as its name imports, to that numerous class of lakes in Switzerland called *moor lakes*." Here there are remains of a settlement, which a strict application of the stone, bronze, and iron theory of the antiquarians must pronounce to be of very high antiquity. The Lakes of Bienne, Neuchâtel, Morat, and Geneva, on the west and south-west of the country, are rich in their treasures of wreck and ruin. Thanks to Colonel Schwab, more than twenty sites of lake dwellings have been more or less fully explored on the Lake of Bienne. Of these the settlement at Nidau, at the northern extremity of the lake, is remarkable for the wealth of its relics of bronze. As many as fifty settlements have been discovered on the Lake of Neuchâtel, chiefly, as in the case of the Lake of Bienne, on its eastern border. The Lake of Morat has supplied between fifteen and twenty examples of the pile dwellings. These lie both on the eastern and western shores of the lake. Lastly, upwards of twenty spots are known to have been occupied by the mysterious men of the waters on the Lake of Geneva. The settlement at Morges, to the west of Lausanne, on the north shore of the lake, was one of the first to be determined and examined

after the original discovery at Meilen early in 1854; and the antiquities which it have yielded has given it a high place among its peers. Altogether, nearly two hundred sites of lake buildings have been ascertained to exist in different parts of Switzerland. Of those which have been discovered in other countries, particularly such as lie about Switzerland, we may have occasion to speak further on in this paper.

The scientific industry, and acute but cautious inductions of the Swiss explorers, enable us to go far in explaining how the builders of the lake dwellings went about the work of establishing their water-homes; as also what was the material of which those homes were made, and how the makers of them used it in their architecture. For the most part, the situation chosen by the pile builders for a settlement appears to have been the margin of a lake, where the water was neither very deep nor very shallow, and where the bottom was soft enough to admit of the easy planting of their piles. When such a situation was selected, they proceeded to cover a certain area of the lake, sometimes a very large area, with a forest of piles driven two, three, or more feet, into the lake-bed, and having their heads raised a yard or two above water. The first row of piles ran parallel with the shore at some distance from it; thence other rows, standing side by side with this, extended outward towards the deeper waters of the lake. In some cases the piles do not seem to have been fixed in rows; but usually a general parallelism was preserved, the piles being driven in lines forming a right angle, or nearly so, with the shore. The piles were not always planted single. Occasionally they are found in pairs. And while in some instances they are crowded thickly together, in others they are considerably wider apart. At Meilen and elsewhere the average distance between the piles was a foot or a foot and a half; but the intervening spaces were not unfrequently larger, as at Robenhausen and Nussdorf, where the average would be two or three feet. At Wangen, on the Unter See, M. Löhle states, the "piles were driven in for the most part one or more feet apart, so that in the space of a square rod there are at least twelve, though sometimes seventeen or twenty may be seen." The number of piles in a settlement was of course determined by various conditions of necessity, convenience, or inclination. At Nussdorf, where the settlement covers about three acres, the piles are reckoned at three thousand. Unteruhldigen is supposed to have had at least ten thousand; Sipplingen, extending over twenty-five acres, forty thousand; Wangen, just mentioned, not fewer than fifty or sixty thousand; Roben-

hausen, perhaps as many as a hundred thousand. The wood used for the piles was chiefly oak, beech, birch, and fir; but elm, ash, alder, aspen, maple, willow, hazel, and even cherry, it is said, have been found in various localities. Whole stems with their bark on were commonly employed for the piles; but they were often split, so as to furnish timbers of from three to seven or eight inches in diameter. The lower ends of the piles were almost invariably sharpened by fire, and by tooling with the stone hatchet or celt, in order to prepare them for driving. Less frequently they are found to have been wrought with tools of bronze or even of iron. There is reason to believe, that in many cases, as, for instance, at Unteruhldigen and Nidan, horizontal beams were sunk among the vertical piles, or that the piles themselves were fastened together by such beams, with a view to the bracing and strengthening of the sub-structure. It is not always easy to determine, whether the timbers now lying horizontally or obliquely among the rotten pile-heads at the bottoms of the lakes were originally interlocked with the piles by the builders of the lake dwellings, or whether they are portions of the platforms supporting the houses, that have fallen from above, and so are mixed up with what at first sustained them. In some settlements clay seems to have been used to bind the piles and other supports of the houses into a more solid basis; and in other cases large stones have, apparently, been brought in canoes and dropped among the piles for the same purpose. "In fact, one boat or canoe, still loaded with the stones which proved too great a cargo for it, and which consequently sank it to the bottom, is still to be seen at Peter's Island in the Lake of Biemme." The outermost row of piles "appears to have been covered or closed in by a kind of wattle or hurdle work, made of small twigs or branches, probably to lessen the splash of the water, or to prevent the piles from being injured by floating wood." Large fragments of this protective matting have been recovered at Robenhausen and elsewhere.

The piles having been driven so that their heads should all be at the same level, the next business was to cover them with a wooden platform, suitable for the erection of the houses. "To accomplish this," says Dr. Keller, "stems or trunks ten or twelve feet long had holes bored in them at both ends, and they were then fastened with wooden pins to the heads of the upright piles. Trunks of fir wood five or seven feet long were then split into boards about two inches thick and fastened with wooden pegs into the framework" of timber

beneath them. Thus a solid and tolerably even foundation was provided for the huts. The existing wrecks of the settlements are in evidence that these wooden platforms were not so closely knit but that hatchets, hammers, and the like might easily slip through between the boards; and it is one of the surest of the deductions which the *savans* have gained from this same source, that at certain intervals open spaces were left in the platforms to serve the purpose of ash holes and rubbish pits. "The quantity of broken celts, broken pottery, and refuse of animal and vegetable food lying together," and that most commonly at regular distances, establishes the truth of their conclusion. In some cases, if not generally, the dwellings do not appear to have been built upon the naked boards of the platform, but upon "a bed of mud, loam, and gravel," laid on the surface of the boarding and "beaten down firmly either by the feet or by the wooden mallets, of which several have been found" in the settlements.

On the subject of the huts of the Lake dwellers, our author writes :

"There can be no doubt that small piles or stakes formed the framework of the huts. Some of these have been actually found projecting considerably above the platform. Probably in some cases . . . fresh piles were driven in for this purpose, which did not go quite down to the bottom of the lake. . . Of course these piles would mark out the extent of the dwellings themselves, and in one or two favourable instances we have thus the ground plan of a settlement; but we have more than this: the size of the house is further marked out by boards, forced in firmly between the piles, and resting edge-ways on the platform, thus forming what at the present day we should call the skirting boards of the huts or rooms. It cannot now be determined whether this was continued higher than a single board, as more than this has not as yet been actually discovered. . . The walls consisted of upright poles, wattled with rods or twigs, and in order to keep off the wind and the rain this wattle work was covered both inside and out with a bed of clay from two to three inches thick.* . . This is proved by numbers of pieces of clay half burnt or hardened in the fire, with the impressions of the wattle-work still remaining. These singularly illustrative specimens are found in nearly every settlement which has been destroyed by fire."—Pp. 7, 8, 296, 297.

* Speaking of a settlement at Auvernier, on the Lake of Neuchâtel, Professor Desor says : "The wattle work which formed the covering or walls of the huts is lying on the bottom, and consists of poles from two to two and a half inches thick, at a distance of two feet apart. Rods one and one and a half inch thick are closely interwoven crosswise with these poles. Unfortunately this wattle-work is too rotten to be taken up from the bottom."—*Lake Dwellings*, pp. 153, 154.

The question was early raised, in the course of the Swiss discoveries, whether the form of the huts was rectangular or round. M. Troyon's restoration, in the first of his plates, exhibits them as circular, though he allows and argues that possibly the square form may have been in use likewise. He says—

“ La forme circulaire des cabanes, générale dans l'ancienne Europe, est confirmée par les débris de revêtement en argile retrouvés sur quelques emplacements de la Suisse. Des huttes de forme carrée ont cependant existé, dès le premier âge en Irlande, en Suède et ailleurs, aussi doit on reconnaître que les constructions ont pu présenter des variétés à la même époque, dans le même pays, et sur le même lac. Quoi qu'il en soit, ce dessin . . . représente le genre prédominant des constructions lacustres de la Suisse, si l'on admet que la plupart des cabanes étaient circulaires ? ”—P. 456.

Dr. Keller expresses himself positively that the houses were generally squared and not round, though he thinks it not impossible that the round form may have been sometimes adopted. He says—

“ All the evidence, which has yet come before us, proves that the huts were rectangular; but some of them may possibly have been round, as, from ancient authors, it is very evident that the huts of many nations on terra firma were round in form.”—P. 8.

In another place he writes :

“ There can be no doubt that the huts of several kindred races on the main land were in many cases circular (Strabo, iv. 4. ‘ The Belgian Gauls made their huts spacious, out of boards and willow hurdle work, dome-shaped with a high roof ’) ; but all the evidence we possess as yet respecting the huts of the lake dwellings in Switzerland, tends to show that they were rectangular. The curve of the small pieces of clay covering of the wattle-work found at the bottom of the water cannot be brought forward to prove that the huts were circular, still less to show their diameter : these pieces are generally not more than one foot wide, and have evidently been exposed to great heat before they fell into the water, besides which alabs with very different curves and some even perfectly flat, were found promiscuously on the same spot.”—Pp. 296, 297.

As to the appointments and fittings of the pile houses little can be affirmed with confidence. “ It is not known whether the huts were divided into several rooms or not. . . . From the remains of straw and reeds found in every lake dwelling it seems almost certain that the huts were thatched with these materials, and highly probable that the dormitories

were strewed with the softer kinds of straw or hay." The huts seem to have been floored with clay or with a mixture of clay and gravel. In the middle of the floor was a hearth, consisting of three or four large slabs of rough sandstone; and it is probable, from the almost universal prevalence of clay weights for weaving, that most, if not all, of them were furnished with a loom. Among the buried ruins of the dwellings "portions of young trees, with their branches partially lopped off," are not unfrequently met with, and it has been suggested that these were probably fastened to the roof or walls for the purpose of hanging up mats, nets, pots, tools, &c., some of which seem to have had rope handles attached to them. "It is impossible to ascertain whether the platform was covered densely or sparingly with huts, though we know that in one case, at Niederwyl, they stood very close together."

One very interesting fact must not be lost sight of in describing these lake settlements. Herodotus, in the often quoted passage respecting the pile-builders of Lake Prasias, near the mouth of the Strymon, states that their "platforms stand in the middle of the lake," and "are approached from the land by a single narrow bridge." There is every reason to believe that the Swiss lake-dwellers followed the same practice. Describing the relics found at Moosseedorf, Dr. Keller says:—"Cross-branches laid on the bottom, in the manner of a fagot bank, or fagot road, appear like the remains of a bridge or stage connecting the settlement with the shore." Again, the settlement at Robenhausen is described as having been connected with the shore "by means of a bridge or stage, of which the piles are still visible." So of the settlement at Allensbach, on the Unter See, it is said:—"In one place the rows of piles take the direction of the mainland in such a manner that they may, with tolerable certainty, be considered as the remains of the ancient stage or bridge." In all probability the bridge was part of the perfection of a lake settlement, but there seem to have been cases in which it was dispensed with.

The plan and style of the lake buildings, wherever found, are all but identical. One type of variation, however, claims to be noticed. In some of the settlements, as, for example, Niederwyl and Wauwyl, instead of piles being driven into the bottoms of the lakes as supports for the hut-platforms, the substructure was built up of "a mass of fascines or fagots laid parallel and crosswise one upon another." The lowest bed of fascines rested immediately upon the lake-bed. Then

came a layer of brushwood, or of clay and gravel. Then another layer of fascines was thrown down, and so on, till the required elevation was attained. In order to give coherence and stability to the fagot-work, vertical wooden piles were driven into it here and there, and these appear to have served, in some cases, as poles for the house-walls. How such architecture as this could have been successfully performed under water, is a question more natural to ask than easy to reply to. Dr. Keller says rather strongly :—

“The only conceivable mode of explaining it seems to be this : at the commencement of the work several piles were driven into the mud from a raft, from twelve to twenty feet apart, and then fagot sticks were piled up between them horizontally, one upon another, just as we find them arranged in the excavation ; when loaded with a sufficient quantity of gravel the whole mass of fascines must necessarily have sunk down to the bottom between the upright piles which served as piles or stays. In this manner a number of masses of wood were laid in the water one after another till the substructure had attained the desired height. Naturally the part above the water was more carefully executed. The upper beds of fascines in fact lock into one another at the ends, and form one continuous mass ; and no large vertical gaps or chinks filled with clay, gravel, branches, or brushwood, are to be found here, like those which are very common when the lower part is exposed. This fact seems to confirm the above idea of the mode of construction.”—P. 70.

In several parts of Dr. Keller's volume the reader will find detailed descriptions of the fascine lake dwellings. Our limits forbid our following him further. As may be supposed, the dwellings of this class are only found in small and shallow lakes, and the antiquities which they have yielded seem to point to a lower civilisation than that which the pile settlements in general may be believed to represent.

In connection with the relics of the pile settlements, hitherto described, are found, sometimes sunk in the lake-beds, oftener buried in mud or peat, at various heights, above them, innumerable objects in stone, bone, horn, clay, wood, bronze, iron, flax, &c., with several kinds of grain and fruits, evidently used by the occupants as articles of food, dress, household economy, or the like.

Mention has already been made of the hearthstones of the huts. These have been dug up at Meilen, Wangen, and elsewhere, not unfrequently reddened, and in some cases partially covered with soot, the result of the action of the fire which once burnt upon them. Many slabs, either of sandstone or of granite, have also been found with lines or furrows, caused

by the grinding and sharpening of the stone hatchets shortly to be spoken of. It would seem, too, that some such slabs, whether of the one rock or the other, were commonly used in the crushing and mealing of grain. Occasionally a cavity was formed in the slab to assist the process. The grain was bruised by means of so-called "corn-crushers" and "mealing-stones." These are "roundish stones, the size of a man's fist, made out of very hard rolled sandstone, and with certain hollows and flattened surfaces. They vary in form; some are like an orange; others like a ball, with depressions on the four opposite sides." Corn-crushers and mealing-stones have been met with in all the lake-dwellings. Colonel Schwab obtained several granite slabs, with cup-like hollows scooped in them, from the Lake of Bienné. A similar slab, found at Auvernier, had a hollow in it $13\frac{1}{2}$ inches long, $11\frac{1}{2}$ inches wide, and $1\frac{1}{2}$ inch deep, and weighed 88 lbs. Slabs of this description would be employed either as mills or mortars.

By far the most abundant of the stone implements found in the Swiss lake dwellings are the celts or hatchets, with their companion tools the chisels of various type. The celts are wedge-shaped. They were all made with a sharp cutting edge; indeed, some of the specimens in the Swiss museums "might readily be used for cutting lead-pencils." When the cutting edge spreads out beyond the general width of the tool "they resemble hatchets; but, if they are of uniform breadth, or bulge in the middle, not an uncommon case, then they take the form of chisels. The section of many specimens about the middle is square with sharp corners; others are roundish or oval in section, and consequently approach the form of a cylinder." The size and weight of the celts are very unequal. Some are eight inches long: one found at Meilen was only an inch and a half in length. Some weigh a pound or more; others weigh only half or even a quarter of an ounce. All were originally hafted. On this subject Dr. Keller writes, with reference to Meilen, what will equally hold of the other settlements:—

"All the celts and chisels found at Meilen were originally hafted in pieces of stags' horn, and a considerable number were found still in their handles. To make this hafting, a piece of the requisite length and thickness was cut out of the main stocks of the stag's horn, clearly with no other instrument than a stone celt. A hole was then worked out at one end, wide and deep enough to receive the lower [or blunt] part of the celt. The other end [viz. of the piece of horn] was cut into a four-sided tenon or plug, evidently intended to be set in a shaft, a stick, or a club. Of this third limb of the imple-

ment not a single perfect specimen was found here. . . . The perfect implement with all its three parts has been found at Robenhausen.'"
—P. 19.

There can be little doubt as to the manner in which the celts were ordinarily manufactured. They tell their own tale. First some hard and tough specimen was selected from among "the rolled or rubble stones abounding in the Swiss valleys." This having been "partially sawn through on opposite sides by means of flint saws, used with water and quartzose sand, was then broken in two by a blow." Afterwards the tool was finished by the toilsome process of beating with stone hammers and of grinding on slabs of sandstone.

With respect to the material out of which the celts, &c., were made, Dr. Keller states that the stones used for the purpose are so numerous and diverse, that even advanced geologists are often puzzled to determine their true nature and the localities from which they came. "The celts found at the Lake of Bienné, at Bern, at Zürich, and at the Lake of Constance, form quite as good a collection of specimens of the rocks of the high Alps, from which the different valleys descend, as the erratic blocks used for building the castle towers and the city walls." Of a thousand stone implements, celts, chisels, axes, hammers, &c., found at Nussdorf, Dr. Lachmann says, that while nearly fifty celts were made of nephrite—of which more hereafter—he found among them examples of "serpentine, diorite, epidote, decomposed green schist, basalt, porphyry, gneiss, and other alpine rocks." At the pile settlement of St. Andreas, near Cham, on the Lake of Zug, celts were met with consisting of "very coarse gneiss, containing a quantity of epidote." Others were "of a kind of serpentine, which does not occur in erratic blocks in the canton of Zug." One single specimen seemed to be Julier granite from the pass of the same name or from the Grisons." Another specimen was a "talco-quartzite, of which numerous blocks are to be found in the eastern part of the canton, being, in fact, erratics from the canton of Glarus." So, speaking of the stone implements generally, Dr. Keller finds amongst the materials from which they are found, "red flint probably from Bavaria or the Voralberg, micaceous schist from Davos, Scaletta, and Flüela in the Grisons, red sandstone, now used for whetstones from Rheinfelden (Aargau), crystals from the high Alps, asphalt from the Val Travers (Neuchâtel), white marble from the Splügen," &c.

An exceeding interest attaches to one kind of stone, of which the celts are often found to consist—the transparent

jade or nephrite just alluded to. Nephrite celts occur "in all the older settlements," particularly at Meilen; and yet, so far as is known, there is no nephrite to be found either in Switzerland or in any other part of Europe, the mineral being only obtained from Egypt, China, and a few other extra-European countries." So far as existing evidence enables us to judge, nephrite came ready wrought from the East into the hands of the pile dwellers. "No Swiss geologist has found it either *in situ* or in the shape of gravel; and no unworked pieces, nor any waste or chippings from it, have yet been found in the lake dwellings." On this point Dr. Keller quotes from a paper published at Bern in 1865, by Professor Von Fellenberg, affirming the stone celts from Meilen and Concise, which he (Professor Fellenberg) had carefully examined and analysed, to be "genuine nephrite," and endorsing the general belief that the Swiss lake people must have obtained it in the way of barter from Africa, Asia, or some other part of the world beyond the confines of Europe.

It is a remarkable fact that as yet not a solitary example of a flint celt has been discovered in any one of the pile settlements of Switzerland. And what is also worthy of remark, though stone hammer-heads of serpentine and of a rock allied to serpentine have been found at Meilen and elsewhere, bored for a handle, this kind of tool, and indeed bored stone tools of every kind, are among the rarities of the relic-beds.

As flint celts are altogether wanting, so there is no great abundance of flint implements of other descriptions in the lake dwellings. "The reason of this is, that the raw material or the nodular flint found in the beds of the chalk is not met with in Switzerland." France and Germany appear to have supplied the greater portion of the flint used by the pile builders; perhaps some of it came from the Jura. The tools manufactured from it were generally of small size, such as knives, scrapers, arrow-heads, lance-points, with other kinds of instruments for cutting and piercing. At Moosseedorf, what might be called a saw-knife was dug up, fastened with asphalt or mineral pitch into a fir-wood handle. A rude tooth-brush with a jagged flint blade instead of the bristles would give a fair idea of this instrument. At Meilen a somewhat similar saw was found, the blade of which was fixed by means of asphalt into a piece of yew wood of the form of a weaver's shuttle, the obvious design being to enable the workman to use the tool with greater ease and safety. Wrought flint flakes of a blunted rectangular form, varying in length from an inch to six or eight inches, are among the most

common implements of this class yielded by the wrecks of the lake dwellings. Some of these are probably knives without their setting; others, perhaps, were used as scrapers for scaling fish or for some kindred purpose. Meilen is the settlement which has proved richest in its store of flint implements, but they have been obtained in larger or smaller numbers from the other stations. Moosseedorf and Wauwyl would seem to have been the seats of very considerable flint implement manufactories. Speaking of the former of these lake dwellings, in terms of the report of M. Jahn and Dr. Uhlmann, Dr. Keller says—

“ Every little hillock in the surrounding marsh land, still partially covered with peat, and hardly rising above its level, appears to have been a place where flint was worked into implements, for nothing else but flint is found in any of them except some broken white pebble-stones and traces of charcoal; more than a thousand pieces of flint in flakes, cores, or implements intended for some special purpose, cracked off in all sorts of ways, and afterwards hammered to the required shape, were found in these localities. The flakes are found of various sizes, from that of fish-scales up to two inches in length. . . . The majority consisted of what may be called plates, rather long and with a sharp cutting edge, which by further manipulation could be made into little knives, scrapers, saws, and piercers, as well as into the heads of arrows. . . . The colour of these flints is as varied as their form; they are found white, brown, black, red, and bluish, of all shades; also, translucent, like agate and chalcedony. The greater part appear to have come from the Swiss Jura (chalk), some few from the Alps. Those of a better kind of stone are, doubtless, of foreign origin. The tools used for making these flint implements do not seem to have been of the same material, but of gabbro, a bluish green and very hard and tough kind of stone. Several of these implements have been met with; their form is very simple and varies between a cube and an oval. The oval specimens were ground down in one or two places, and the most pointed part was used for hammering.”—P. 86.

Appearances resembling those of Wauwyl and Moosseedorf have been remarked in other localities, and it is probable that future explorations will increase their number.

Thousands of implements of bone have been gathered from the lake dwellings. Stags, roes, boars, and other animals, in some cases birds also, have furnished the material for implements of this kind. The bones of small animals and birds were used for tools of lesser magnitude: “the larger instruments were made out of the ribs and leg-bones of the roe and stag, and the ulnæ of various ruminants. The hollow bones of these

animals were cut into two parts, lengthways, by means of flint saws, generally along the arterial hollow; and thus, when the fracture was fortunate, each piece had an articulating end for a natural handle. The tool was then finished by means of the grinding-slab of stone." Dr. Lachmann describes the bone implements from Nussdorf as made, some "out of the whole bones of small animals, others out of splinters of those belonging to larger beasts. The bones of the extremities were chiefly used for this purpose, such as the radius, femur, tibia, and fibula; some were ground all over, and some only at one end." Among the tools and instruments of bone have been found netting-needles of boar's tusk; pins of the same material for fastening the hair or clothes; sundry kinds of awls and piercers, some with a head or handle of asphalt; knives of boar's tusk and bears' teeth; pincer-like instruments; chisels of stag-bone, used apparently in the shaping and ornamentation of earthenware; fish-hooks, sometimes barbed, with other implements of the fisherman; arrow-heads, in several instances, as at Wangen, with the asphalt which fastened them to the shaft still adhering to them; besides daggers, lance-points, and a number of objects not easily brought under any category of modern European civilisation. Boars' teeth, either whole or split in two, and ground sharp, seem to have been frequently used as knives for cutting skin and leather. The large teeth or tusks of bears, "brought to a point at the fang, and perforated near the end," may have been used for making fishing-nets. This cannot have been the use of the wolf's grinders, pierced at the fang, found in the Maurach and Wangen settlements. Some have thought that these perforated teeth were worn as charms or amulets. A bone saw from Wanwyl, figured by Dr. Keller, if it is not unique, has but few companions of its own substance among the relics. At Marin, Colonel Schwab has recently found a bronze needle in a case made of the bone of a stork.

"Next to bone, horns, especially those of the stag and the roe, offered suitable material for making the larger pointed tools, daggers, &c." Portions were cut from the main branch of the horn, and then were ground, sharpened, or pierced, according to the use for which they were designed. The method of hafting the stone celts by means of pieces of stags' horn has already been described. Awls, chisel-handles, hammers, mallets, harpoons—some of them double-barbed—combs, goblets, and other vessels and tools, were manufactured out of stags' and roes' horns. Indeed, the horns of these animals seem to have met the demand both of the most

vulgar necessities of the lake dwellers and of their most refined and delicate tastes. On the one hand, they appear to have employed them, pretty much in a state of nature, as ploughs and harrows, in an agriculture which even an Egyptian or Syrian might have smiled at. On the other, they made beads from them such as might very well fit into the necklaces seen at the present day among the girls of Elephantine and Philæ on the Nile. It is one of the paradoxes of the pile settlements that hitherto, as Dr. Keller informs us, "no implements have been observed made out of the horns of the ox, the goat, or the ram; and yet their bones are found in the dwellings. The tusks of the wild boar seem to have been especially chosen for cutting tools; those of bears or wolves for amulets." The corner teeth of pigs and dogs likewise were used in the manufacture of implements, as at the settlement at Maurach.

The perishable nature of wood will have caused innumerable objects of this material, once buried in the lake dwellings, to disappear for ever. Thanks, however, to the conservative, or only slowly-destructive, qualities of certain elements into contact with which many wooden relics of the settlements chanced to come—the fire which destroyed the bulk of the settlements being not the least of these—such relics, carbonised or half-carbonised, whole or fragmentary, sound or partially decayed, have been found in considerable numbers, and add another interesting chapter to the history of their long-forgotten owners. The charred boards, hacked by stone celts, which have been discovered at Meilen and elsewhere, belonged, in all probability, either to the hut-platforms, or to the huts themselves; but the refuse of the hearths also seems to have been preserved in some instances in the form of charcoal and of half-burnt pieces of oak, beech, fir, and other timber. What appeared to have been a bench, worn smooth by sitting on, was discovered at Wangen, a short while since, by M. Löhle. It was of oak, some seven or eight feet long, by a foot and a half wide. At Robenhausen, hooks of fir or pine, for hanging things up in the huts—some of them nearly a foot and a-half long—were drawn in great numbers out of the relic-beds. Clubs and mallets of oak, ash, yew, and hazel, have been found in the settlements. The wooden handles of the celts and saws have been already referred to. They are made of fir, ash, maple, and other woods. Yew or maple knives and chisels have been lighted on in several places. Ladles of maple-wood, like those still in use in the Swiss milk-châlets, with plates and

dishes of the same material, occur at Robenhausen. Here, too, or elsewhere, various fishing gear, a maple-wood tub, a yoke of hazel-rod, bows of yew, oak spearshafts, a threshing-flail, a shoemaker's last, and yew-wood combs, have been raised from the lake bottoms. One of the combs found at Moosseedorf is two inches and a half broad, and nearly five inches long, and it is decorated with a pair of "buttons or projections" on one of its sides.

Without enumerating other objects in wood scattered among the ruins of the lake dwellings, it will suffice to crown the foregoing list by mentioning the fact, that in several instances boats or canoes, like the modern Swiss *einbäume*, have been discovered, or even raised out of their sepulchres of peat or mud. At Robenhausen, M. Messikomer disinterred "a remarkable canoe made out of a single trunk (*einbaum*), such as may now be seen in the lakes of Zug and Lucerne, twelve feet long, one and a half feet broad, but only five inches in depth." Dr. Keller figures this object in one of his plates. Again, at Nidau, it is stated, "a boat lies embedded in the mud . . . made of one thick long trunk of an oak, merely hollowed out either by fire or by hatchets the whole length of the whole." So a canoe, we are told, may be seen at Morges, half-buried in the mud, of which M. Forel writes, that "it is sharpened to a point in front, and apparently is formed of a single piece of wood hollowed out like the *piroques* of savages; it is hardly more than two feet wide." It may be added, that fir net-floats and other implements made of the bark of trees have been met with in different localities.

Clay, under various conditions, plays an important part among the recovered monuments of the lake settlements. At Wangen, "perforated balls of clay, mixed with charcoal," have been collected by dozens. Robenhausen has furnished a multitude of similar bodies, black, conical, and perforated. In many other settlements coarse clay balls, sub-globular or conical, have been discovered, most of them pierced, so as to admit of being suspended by a cord. The greater number of these objects seem to have been loom-weights. Some of them, perhaps, served as sinking-stones for fishing-nets, or simply as weights useful for many purposes either in the indoor or outdoor life of the people. Almost all the stations have yielded clay-spindle whorls, like those found in ancient graves. At Meilen, Wangen, Nussdorf, Unteruhldigen, everywhere, the spindle-whorls present themselves, sometimes "plenty as blackberries." It is characteristic of the western lakes—those of Bienne, Neuchâtel,

Geneva, &c.—that the settlements upon them agree to preserve a number of clay-rings, sometimes of large dimensions, the use of which appears to have been to support pipkins on the fire, and in general, to serve as legs to various domestic and other vessels, which had not the faculty of standing alone. Little stones and pieces of charcoal are commonly mixed with the clay of which they are formed; and they are often imperfectly burnt, and otherwise bear marks of rude and careless manufacture. “They vary in external diameter from three and a half to nine and a half inches; the hole in the middle is from seven lines to two and a-half inches wide; and the thickness of the ring itself varies from one inch to upwards of two inches. . . . Many of these rings appear to have become friable from the action of violent heat; but it is not always certain whether this happened on the hearth, or when the settlement was burnt down.”

Remains of pottery are a universal feature of the lake relic-beds, though, unfortunately, the vessels are rarely found entire. The manufacture is of two kinds—one rude and clumsy, the other wrought with more nicety and care. The clay used for the former was commonly mixed with coarsely powdered granite, quartz, or gravel of some kind. Grains of such broken stone have been met with in the vessels as large as a bean. Washed loam, mixed in some cases with a little powdered charcoal, was the material of the finer sort. M. Rochat speaks of vessels found at Concise in the neighbourhood of Yverdon as having been made by the potter’s wheel. In the vast majority of cases, it is certain that the wheel was not used. What Dr. Keller says of the earthenware from Meilen will hold with little qualification of the bulk of the settlements. “The potter’s wheel was not used in any case, but all the vessels were made by the hand alone, aided by moulding and scraping tools, and for this reason they exhibit a good many bulges and lumps, and the sides are of unequal thickness; they have also been ill burnt, and in an open fire, so that the mass did not harden properly, and does not ring when struck.” The vessels seem to have been shaped in the huts or on the hut platforms, and then to have been burnt on shore. As to their form—at least in the settlements which seem to be of older date—it may be said, in general, that they are, for the most part, cup-shaped, with a strong affection for a cylindrical contour, that very few flat vessels appear to have been manufactured; and that urn-like forms, “with large bulge and thin sides,” though sometimes met with, are not an ordinary type of lake-dwelling pottery. It is difficult to find

terms to designate all the kinds of clay vessel which the settlements have furnished. Spoons, ladles, platters, cups, pots, jars, basins, bowls, covers, urns, and a number of others not so easily described—among them some with holes in their sides or bottoms, which look as if they were intended for cheese-strainers—have been found less or more equally distributed throughout the lake area. The size of some of the larger vessels is often very considerable. At Meilen fragments of wide-mouthed jars were dug up, the diameter of which in the bulge ran from seven to thirteen inches, with a capacity of from two to seven quarts. So at Nidau vessels were found "of extraordinary size, the mouth being three feet across." Such vessels were probably used for storing corn and other articles of food. Many of the earthenware vessels obtained from the settlements had evidently been used as pipkins over the fire, for in numerous instances "the lower part of the outside is blackened with soot and injured by the heat, just like the pipkins used in our modern hearths. In several cases," as at Meilen and elsewhere, "the inside was covered over with thick firm soot;" this soot being pretty plainly the charred remains of food of some kind, probably porridge, "which was actually in those vessels when the settlement was burnt." Describing vessels of this sort from Allensbach on the Unter See, M. Dehoff reports:—

"One of these vessels which had a thick coating of soot in the inside was filled with a grey mass like ashes mixed with pieces of charcoal, in which there was a very friable great bone of one of the extremities of an animal. A second vessel, also coated inside with soot, contains a brownish mass of earth, the nature of which is now under consideration by M. Leiner, of Constance."—P. 94.

And Dr. Keller, referring to examples of this class collectively, says:—"The thick crust on the inside of these vessels was caused, as I am perfectly convinced, generally by the burnt remains of a mass of corn-pottage, which adhered to the sides of the vessel when the settlement was destroyed by fire." As though it was not enough for the nineteenth century to handle the saucepans of the pre-historic lake dwellers, but it must needs peer inside them, and see the boiled bison and dumplings, which the poor souls were cooking for dinner that day when the ruin came!

Most of the pottery taken from the settlements makes some pretence to ornamentation. Often it consists of nothing more than "bosses or impressions made with the finger or a little stick." In other cases groups or rows of dots, straight

Swiss Lake Dwellings.

lines running horizontally, vertically, or obliquely, zigzag lines, scallop-work, spirals, &c., either alone or in combination, redeem the vessels from absolute plainness. Instances of anything like elaborate design occur but rarely. A half-moon-like arrangement of the dots is a favourite device. Styles and chisels of bone appear to have been used for ornamenting the pottery, where bronze was not in use. The black or red colour which marks the majority of the vessels, is often due either to the clay of which they were formed, or to the action of fire, or to both of these causes together. Black lead or graphite, and ruddle or red chalk, however, were also employed to paint the pottery; and lumps of these substances have been picked out of the débris of the settlements. If not in the earlier period of the settlements, yet later, it was the common practice of the lake dwellers to beautify the covers of their vessels, or even the vessels themselves, by pressing upon them strips of tin, disposed in an ornamental manner. Cortaillod, Estavayer, La Crasaz near Estavayer, Montellier, and other stations, have produced examples of this species of decoration. An earthenware dish, about sixteen inches in diameter, found at Cortaillod, and figured by Dr. Keller, is a perfect mosaic of tin-foil ornamentation. Dr. Keller's description of it is worth transcribing:—

“ Perhaps no example of this peculiar and remarkable manufacture has occurred in such beautiful and perfect condition as the specimen under consideration. The ornamentation consists of plates of tin as thin as paper, which form a striking contrast with the black ground of the vessel. These thin plates are also ornamented with impressed lines, which, after the plates was fixed, were engraved or indented with a blunt style. By means of this additional work, the tin, which apparently was simply pressed into the earthenware while yet soft, was made to adhere more closely to the clay. The ornamentation consists of a rosette in the middle, formed of quadrangles, which is surrounded by a band of a pattern similar to that called the meander, so commonly found in the earthenware vessels of the bronze period from the Lakes of Neuchâtel and Bienné, and also from Ebersberg. A pattern somewhat similar is also found on one vessel from Wangen, on the Lake of Constance. This dish was made by the hand alone; the material is a dark grey clay, blackened by graphite.”—P. 149.

Professor de Fellenberg analysed the tin-foil employed in ornamenting a very graceful dish-cover—if dish-cover it be—found at Estavayer. It proved to be pure tin without any mixture of lead. At this same station a small bar of tin was excavated, wrought “into a prismatic form by the hammer. It is seven and a third inches long; its greatest thickness is

one-fifth of an inch, and it weighs half an ounce. The colour of the metal and its ductility show that it consists of pure tin, thus confirming the assay made by M. de Fellenberg, who did not find in it a trace either of lead, zinc, copper, or iron."

The only instance in which the earthenware of the lake dwellings makes any attempt to represent animal life, is the case of a rude image of a lizard found at Nidau. But for the four stunted projections which indicate its legs, the creature might as well be a young goose or duck. For correctness of imitation it is a cousin-german of the animals painted over the doorways of the *hadjis'* houses in Cairo and other parts of Egypt.

A curious and interesting discovery has been recently made among the earthenware relics of the lake dwellings. Certain spoon-like objects, formerly supposed to be water-ladles, have turned out on closer inspection to be crucibles for melting copper. Nearly all the specimens have handles; and "all have at the edge a kind of drossy coating, coloured like a deposit of copper, and in some cases like the variegated copper ore. In three cases there were lumps of melted bronze, and in one instance a lump of pure unmelted copper. . . . The material of the crucibles is clay mixed with horse dung, a combination which is now used for moulds in which brass is cast."

The objects in pottery, which have most attracted the attention and tasked the speculative ingenuity of the Swiss antiquaries, are the so-called moon images. These are forms resembling the crescent moon with uplifted horns, usually flattened on the sides, and of no great thickness towards the upper part, but furnished with a broad circular or oval base to stand on. Hitherto they have not occurred in what are thought to be the oldest settlements; but a considerable number of them has been found in various places, chiefly on the Lake of Bienné. "About two dozen, made of clay with quartz grains, were discovered by Colonel Schwab at Nidau. . . . They do not differ much in size, the space between the points of the horns measuring from eight to ten inches, and from the base to the point about six or eight inches." Usually they are ornamented either with rows of dots, or with diagonal, zigzag, or serpentine lines, after the general style of the lake dwellings' pottery. One found at Cortaillod is decorated with a mat pattern. Not unfrequently, the images are perforated near the tips of the horns, the horns themselves being sometimes pointed, sometimes blunt or cut off sharply so as to end in a level surface. In some examples

the moon figures are made of red sandstone, not of earthenware; and bronzes have been met with which suggest the horned moon as the object they meant to figure. If the thinness of these moon images at top did not create a doubt, we should be disposed to forsake Dr. Keller and his brethren altogether, and to explain them as head-rests or pillows, similar to those which many Polynesian tribes, the Fijians, for example, are accustomed to use in our day. If they were sacred symbols, as the dominant opinion of the antiquaries makes them, the fact is one of great interest for its bearing upon the character and origin of the people who employed them, as well as for the general religious history of mankind.

If it be not too abrupt a descent from the moon to cup-mending, let us add that asphalt and ashes was employed by the pile builders for repairing their broken pottery. "Two fragments of a broken vessel," found at Moosseedorf, Dr. Keller states, "were joined together by means of asphalt and ashes run through holes drilled on each side of the fracture." The use of asphalt for cementing "stone celts and flint arrow-heads into their handles and shafts, and also for the actual handles of pointed tools," has been already named. Small vessels, likewise, were sometimes formed of asphalt. A drinking-cup made of this material was met with at Robenhausen. Lumps of asphalt have been discovered here and there among the lake dwellings.

Very numerous objects in bronze have been found in the settlements; but they are not universal like the pottery, or implements of stone; and where they do occur, they are often quite a minority as compared with objects of the kinds just mentioned. At St. Aubin, for instance, on the Lake of Geneva, while implements of stone, bone, and horn, and fragments of earthenware vessels are abundant, not a vestige of bronze has yet been discovered. Meilen, hitherto, has only yielded a plain, thin armilla and a solitary celt of bronze. So far as we know, not an article of bronze has ever been dug out of the ruins of Moosseedorf, of Robenhausen, with its three relic beds, one over the other, of Wangen, of Niederwyl and Wauwyl, of Nussdorf, or of Zug, though, at the same time, there is evidence that the lake dwellers were early acquainted with both copper and bronze, for "traces of the working of these materials have been met with in the lower beds of the stone age settlements, before the appearance of nephrite." Yet in very many of the settlements bronze takes its place on a level with the materials of a simpler and more

primitive civilisation; while again, such a case as that of Morges, on the Lake of Geneva, is almost unique, where bronze is lord paramount, and "stone and bone implements are just as rare as bronze objects are in many of the dwellings of North and East Switzerland." Settlements in which bronze is plentiful lie usually in deeper water, and further from shore, than those in which it is seldom or never met with. The lakes of Geneva and Neuchâtel, in particular, supply examples of this distinction.

The bronzes from the lake dwellings, as to their character, form, and decoration, resemble those commonly found in ancient graves and barrows. Objects of personal use and adornment; tools of various descriptions; household vessels; fishing and farming implements; and weapons of war—all have their representatives; and on all, as Dr. Keller states, "the ornamentation called Celtic was lavishly applied." When we have enumerated pins, needles, buttons, bosses, clasps, buckles, ear-rings, bracelets, armlets, celts, hammers, chisels, awls, knives, screws, basins, fish-hooks, sickles, daggers, swords, arrow-heads, spear-points—to say nothing of dubious surgical instruments, snaffle-bits, drills, and moon-figures—we are by no means at the end of the list of bronze objects described or drawn on the pages of M. Troyon and Dr. Keller. The taste displayed by the lake-dwelling ladies in their hair-pins is only equalled by the skill of the gentlemen who executed them. Some of the pins might in modern England be considered a trifle too large. One nearly nine inches long, and with a hollow, globular head, about an inch and a quarter in diameter, has been found at Estavayer. It weighs two and a half ounces troy, the head alone weighing two ounces. It is handsome, notwithstanding. Indeed, the pins and needles generally commend themselves by the grace, if not by the delicacy, of their shape and ornamentation. The heads of the pins are sometimes hollow, sometimes solid. A modern coat might have supplied the thin-disked button, with its well-soldered shank, dug up at Concise. Besides the ear-rings named above, a great variety of other rings—some solid, some hollow; some made out of thick wire, some formed by casting—have been discovered. The external decorations of some of the armlets are very rich. The fish-hooks found at Nidau are "of various forms and sizes; some with and some without barbs, and with the shanks either bent round or notched. The section of the wire is, in most cases, quadrangular; not a single one has it perfectly round and uniform. These hooks are exactly like those found in the

Celtic settlements of Hallstadt, in Upper Austria." The settlement of Estavayer is remarkable for the number and beauty of its knives. "They indicate, in fact," says Dr. Keller, "such an amount of luxury in this class of implements as can be found nowhere else in Switzerland; thus almost certainly showing that they were industrial products which belonged rather to the end than to the beginning of the bronze age; for knives with a longitudinal cutting-edge, like those of which we are speaking, appear only gradually to have replaced the hatchet-knives or celts, with a transverse edge, which were, in fact, simply the reproduction in bronze of the instruments so commonly in use in the stone age." It is worthy of notice that many of these Estavayer knives bear indubitable marks of having been long and earnestly used. Among the arrow-heads, one found at Estavayer has challenged discussion. There is what appears like a crack or flaw in the side of it; and, as this is "in the shape of a pretty-regular crescent, many persons have thought that, instead of a flaw, it was an intentional groove or gash for the insertion of poison." One of the most remarkable bronze objects met with in the lake dwellings is a wheel from Cortaillod. Dr. Keller describes this object at length, and figures it in his plates. "It probably belonged to a war-chariot (essedum); and, as far as mechanical skill is concerned, is a specimen of very excellent hollow casting. . . . The whole wheel had been cast in one piece; but, unfortunately, when the settlement was burnt, it was partially melted by the heat." Comparing this bronze with "the numerous works of Etruscan art found in Switzerland—*e.g.*, the vase of Grächwyl, the speculum of Avenches, the numerous bronze statuettes," &c.—Dr. Keller inclines to regard this wheel "as the product of an Etruscan workshop." Switzerland, however, was not dependent upon foreign countries during the lake dwellings' era for its bronze founding. At Concise, for instance, "the skulls or refuse of bronze casting and the scoria of copper" have been met with. Fragments of moulds for casting small brass rings have been found at Montellier. Describing an object from Nidau, Dr. Keller says it "was at first considered as a kind of hammer; but it is now thought probable that it may be one of the anvils on which the swords, sickles, and knives were sharpened by beating. It has six sides and a cavity in the centre." The most interesting object connected with the bronze casting of pre-historic Switzerland belongs to the settlement of Morges. It is a mould for bronze celts, the material of which is also bronze.

It weighs four pounds, and is seven and a half inches long. M. Forel writes of this mould: "I found the first half on February 25, 1855, and I despaired of finding the remainder, till, after an interval of four years, my son was fortunate enough to dredge it up, October 18, 1859. The two halves agree, and fit exactly to one another." Dr. Keller gives M. Forel's detailed description of the mould, together with his valuable observations on its archæological characters and relations. A note of Dr. Keller's, referring to this same subject, is worthy of attention:—

"In the year 1822 the owner of the manufactory at Wülflingen, near Winterthur, when digging deep in the ground to make a reservoir, found a space enclosed with sandstone filled with remains of fuel, and which proved to have been a bronze foundry. The walls had been burnt as in a furnace. Within it and near to it was found a quantity of bronze, by one account ten to twelve, and by another thirty cwts. in weight, partly in lumps and partly made into alabs, hatchets, swords, daggers, and pins."—P. 307.

All these facts go to show that pre-historic Switzerland was able to cast, and, in many cases, did cast, its own implements and vessels of bronze.

There is not the smallest reason for supposing that there was ever any iron mining in Switzerland, "either in pre-Roman or in Roman times." All the evidence argues that the lake dwellers obtained their iron from abroad by barter. Pieces of iron, "of the shape of a double pyramid, and weighing about twelve pounds," have been found from time to time within the Swiss area, which seem to have been lumps or pigs, that had come into the country through channels of trade during the pre-historic period. They have not been met with near any Roman site. Of course the metal, when imported, was manufactured by the people of the pile dwellings into the iron objects now discovered in their settlements. In the great majority of the settlements, however, no iron has yet been met with. With the single exception of a poignard, no iron whatever has been traced in the great bronze settlement of Morges; much less does it appear in those places where bronze is wanting. Marin, on the Lake of Neuchâtel, is the iron settlement *par excellence*; and iron has been found at Unteruhldigen, Sipplingen, Nidau, and a few other stations. The objects in iron taken from the settlements "consist of weapons, of agricultural and domestic instruments, and of ornaments; and they exhibit . . . whatever in the older lake dwellings was made either of stone, or bone, or bronze." A

complete catalogue is impossible ; but swords, daggers, spear-points, arrow-heads, shield-handles, knives, sickles, axes, chisels, gouges, forks, shears, pincers, curry-combs, bits, ladles, hooks, clasps, rings, pins, nails, buttons, and other articles, some intelligible, others obscure, have been discovered in the places named above, chiefly at Marin. Among the implements from Marin "is an anchor made from stone and iron. The central portion is an eight-sided prism of stone, about thirty pounds in weight, into the lower part of which iron arms are fastened, bent, and of the shape of willow leaves. Originally it had four of these arms or hooks. The upper hole was used for fastening the cable to it." Fibulæ or clothes clasps were found in large numbers at Marin. It furnished, likewise, several specimens of ferrules or points for the feet of lances. They are eight or ten sided pyramids, and "vary in length from four and three-quarters to seven inches." As yet Marin has yielded no arrow-heads. Spear-heads are numerous, and of great interest from their style of manufacture. The swords are the pride of Marin. Respecting these, Dr. Keller writes :

"About fifty swords have been found at Marin up to the present time, some with and some without sheaths. The latter are all made of iron, with one single exception, which consisted of thin bronze plate. They are, on the whole, master-pieces of the smith's art, and in making them the hammer was chiefly used—not the file—and the polish of the smooth shining portions was obtained by the use of scraping and grinding tools. Not one of these swords, either in length, breadth, or weight, is exactly like the other, and the ornamentation is remarkably different in every specimen. Most of them are in good preservation, but still some of them are bent and full of notches at the edge."

In addition to the objects now described, a large number of miscellaneous articles, belonging to the same great groups of substances and manufactures, might be enumerated, as the yield of the relic beds. Near Bodmann, on the western shore of the Ueberlinger See, a clay jar was found containing about six hundred bugle beads made of the "diceras oolite, a kind of stone which extends from Wangen, near Solothurn, to the Bernese Jura." Elsewhere beads of limestone, serpentine, and other rocks have been found. Fossils have not unfrequently been met with, which have served as ornaments, such as fish vertebræ, ammonites, terebratulæ, belemnites, and plates or joints of encrinites. Many of these are pierced or grooved round in order to receive a string. "Spindle-wheels" or counters, of stag's horn, sandstone, and limestone

occur occasionally, though the vast majority of these objects are clay. Several pieces of fine carbonate of lime were dug out of the relic mud at Meilen. "The anterior part of a copper axe or celt" was found at Maurach, and a perfect axe at Sipplingen. Moosseedorf has furnished an arrow-head of rock crystal. Amber has been discovered in rare instances. At Meilen "a single bead of this material was found, exactly like the beads used for neck ornaments, which are met with . . . in ancient graves." Among the remains at Maurach mention is made of "a perforated flattened bead of amber . . . more than an inch high and nearly an inch and a half broad; the amber is opaque, yellow, cloudy, with whitish veins and spots." A few oval amber beads were met with at Cortaillod. Montellier, too, has supplied a bead of amber. There may have been other cases in which the lake dwellings have yielded amber, but we do not know of them. Jet also is scarce. Beads of this substance have been found at Nidau; and Concise has furnished "the fragment of a jet bracelet, small but well executed." Glass is more abundant than either jet or amber. In the very ancient settlement of Wauwyl a glass bead—probably from Phœnicia—was discovered, of which it is said that it is "of a bluish-white colour when the light falls upon it, but of a honey-yellow when held between the light and the eye," the bluish colour being due to the presence of lead. At Unteruhldigen "eleven bottoms of goblets, and a smooth glass slab," with nearly thirty other articles in glass, were found. These must surely belong to a comparatively late age. Five pieces of grey-coloured glass were found at Sipplingen, "all covered with little wart-like projections." Besides these, three other glass articles were met with at this settlement. Glass beads were strung together with the beads of jet just spoken of as coming from Nidau. They were "exactly like those found in such extraordinary numbers in the tumuli of later date and in Roman stations; they consist of the same sort of material as was employed for the better sort of tesserae or mosaic cubes, and for the counters used in games." The amber beads found at Cortaillod also had bluish and white glass beads with them. The iron settlement of Marin has proved more fertile in glass than any other of the lake dwellings. Dr. Keller gives the following list of objects in glass obtained at Marin :—

"Pretty rings belonging to a necklace, white, blue, and yellow in colour, two small blue rings, a portion of an armlet of blue glass, rather a long bead of bluish glass, and a round unperforated ball of glass, of

a blue colour, which Colonel Schwab informs me was the head of an iron hairpin."—Pp. 241, 242.

Gold seems to have seldom met the eye of a lake dweller. Only three instances of it are recorded in Dr. Keller's volume. "A spiral of gold wire," two-thirds of an inch long, "square in the section, first twisted round on itself and afterwards coiled into a spiral form," was discovered at Nidau, as was also a ribbed and corrugated little plate of gold, three-fifths of an inch square. Some objects of gold were found at Cortaillod; amongst them were six earrings, all made of wire-twist, from which hangs "a thin plate of a pointed oval form," the plate being "ornamented with a series of raised lines one within the other." Lastly, the fruitful Marin has supplied one of those Gaulish gold coins, the quarter-stater, which have been so often found in Switzerland, and which may be considered as the current money of the Helvetii. The quarter-stater from Marin, like its companions from the land, "is a bad imitation of the Macedonian coins of Philip, and has on the obverse the head of Apollo with the fillet of laurel, and on the reverse a biga, with the emblem of a bird under the vehicle, and some letters which may be read, $\Phi\Lambda\Lambda\Lambda\Lambda\Lambda\Lambda\Lambda\Lambda\Lambda\Lambda$. Very probably the gold was collected in the Aar and its tributaries, and the money coined in Aventicum." Besides this gold coin, other Gaulish coins have been met with in Marin—viz., first, some silver pieces of Marseilles; and, secondly, "several coins cast from a mixture of copper, lead, and tin (*potin*), which are commonly found in the districts of the Helvetii, Sequani, and the *Cœdri*. On one side of these *potin* pieces "there is a head, and on the other the figure of a fanciful animal with a mane, short horns, and long tail. It is difficult to say whether a horse is intended. The workmanship is very rude." Finally, a Roman amphora was found at Corcelletes; pottery of red clay (*terra sigillata*) and roofing tiles of Roman workshop were dug up at Unteruhldigen, Marin, and other settlements; and a Roman key, figured by Dr. Keller, was discovered among the relics at Sippligen.

It might have seemed quixotic to expect that the subaqueous ruins of the lake dwellings would throw much light upon the dress, the diet, or the general physical condition and circumstances of their occupants. Chiefly through the good offices of the fire, however, which consumed the settlements, the peat and mud have made revelations on these subjects, which are equally startling and important.

A very considerable number of articles manufactured from *bast* or vegetable fibre, and from flax, has been recovered

from the Swiss relic beds. Among many others Dr. Keller enumerates ropes and cords, formed by twisting together thin twigs, especially of the willow; ropes and lines of rushes, reeds, straw, &c.; lime-tree bast intertwined with reeds and strips of flax; mats platted into a kind of trellis-work from bast-strips; strands of flax "laid in straight lines close to each other, and bound round and fastened together by similar strands," so as to form a matting which might be used either as coat or mattress; fishing and hunting nets of various strength; several kinds of platted cloth, "remarkable for their ingenious structure, and for the accuracy and care of their workmanship;" cloth made not by hand alone, but by some kind of weaving apparatus; lastly, cloth embroidered after various designs by means of needle and thread, and, in the case of one of the specimens, with a four-cornered linen pocket sewed on to it. "Heads," or bundles of rough or unworked flax, clean and ready for use, have likewise been found in the dwellings, as have also beautiful balls or hanks of string. "The bundles found at Robenhausen, both of simple yarn and also of thread, made of two or more strands twisted together, proved the great ability possessed by the settlers in the art of spinning." They do not appear to have been equally clever at tailoring. "After careful examination," Dr. Keller says, "we have never found—with the exception of the pocket and embroidery just mentioned, and one other hem made by a needle—any kind of seam or appearance of the cloth having been cut out," so that the woven fabrics of the lake dwellers will have served rather as wrappers for the body than as clothes in the European sense of the term. As yet no hemp has ever been met with in a lake settlement. Pieces of leather have been discovered here and there, and this, coupled with the wooden bast named some pages back, seems to point to sandals as part of the pile dwellers' personal accoutrements; but here, for the present, we are almost wholly in the dark.

Beside the raw materials and manufactures just enumerated, the relic beds have yielded, mostly in a carbonized state, a surprising variety and quantity of vegetable remains, representing for the most part the food of the lake-dwelling people. Dr. Keller's volume contains extracts from a most interesting memoir on the plants of the lake dwellings, published by Dr. Oswald Heer, of Zürich, which furnish a pretty complete index to what is known on this subject. Among the cereals, the "small-grained, six-rowed barley, and the small lake-dwelling wheat" take the precedence. After these come five

other kinds, either of wheat or barley, and two sorts of millet, with spelt and oats. Rye has never been met with in the pile settlements. "The millets are undoubtedly spring crops; in fact, all the other kinds of cereals seem to have been the same." The quantity of corn brought from some of the lake beds is amazing. At Wangen more than a bushel was found together; and M. Löhle calculates that first and last he has obtained not fewer than a hundred bushels of corn from this lake dwelling alone. Wheat bread has been discovered in several places; also bread made from millet with a mixture of wheat grains and linseed. No barley bread has been found; barley was probably eaten parched or roasted.* The bread found at Robenhausen, when newly baked, must have weighed something like forty pounds. Corn-field weeds, some indigenous, others introduced with the cultivated, plants have been lighted on, often in considerable numbers; such as darnel, several varieties of goosefoot, burdock, corn cockle, white campion, chickweed, and others. "A fact of great interest is the occurrence of the Cretan catchfly, as it is not found in Switzerland and Germany, but on the contrary, is spread over all the countries of the Mediterranean, and is found in the flax-fields of Greece, Italy, the South of France, and the Pyrenees. The presence of the corn-bluebottle is no less remarkable, for its original home is Sicily." Peas, parsneps, dwarf Celtic field beans, and very small lentils, exhaust the list of kitchen vegetables. The lake people were given to apple-eating. Great numbers of charred apples—the small ones whole, the larger ones cut into two, occasionally into three pieces—have been met with in the relic beds. Three hundred apples were found together in one place at Robenhausen. Sour crabs are plentiful. At Robenhausen what appeared to be a cultivated apple was discovered. Pears occur much less frequently than apples. Stalks, cores, and pips of apples and pears have been found apart from the fruits themselves. Fruits of the service tree, cherry, and bullace have been met with. "Sloes were gathered by the colonists, and also bird cherries in great abundance." Rasp-

* This statement of Dr. Keller's seems to need a little qualification. Elsewhere, describing M. Löhle's recent discovery of baked cakes at Wangen, he says: "The form of these cakes is somewhat round, and about an inch or an inch and a half high—one small specimen, nearly perfect, is about four or five inches in diameter. The dough did not consist of meal, but of grains of corn, more or less crushed. In some specimens the halves of grains of barley are plainly discernible. The under side of these cakes is sometimes flat, sometimes concave, and there appears no doubt that the mass of dough was baked by being laid on hot stones, and covered over with glowing ashes."—P. 63.

berries and blackberries, likewise, were common among them. Strawberries were less plentiful. "Seeds of the dog-rose, the common elder, and the dwarf elder, are met with in abundance. On the other hand, the seeds of the bilberry are rare, and the red whortleberry or cowberry does not appear to have been eaten, for only its leaves are found." The berries of the wayfaring tree are sometimes met with. It is doubtful whether the grape has been discovered in the Swiss lake dwellings. Hazel nuts, generally cracked, and beech nuts have been discovered in large quantities. "The water chestnut (*trapa natans*), which now only exists in Switzerland in a tarn in the Canton of Lucerne, but which is found both at Robenhausen and Moosseedorf, formed doubtless an article of food, as it does at the present day in Upper Italy." It is probable that the beech nuts were not only eaten, but that oil was expressed from them. Two oil-producing plants, the garden poppy and the dogwood, occur in the settlements. "A whole cake of the seeds of the poppy was found at Robenhausen. Caraway seeds were met with at Robenhausen. They seem to have been used as condiments for food. Mention has already been made of bast as obtained from the lime tree. The weld or woad (*reseda luteola*) found in the dwellings may have served for dyeing. Most of the forest trees of which the lake settlements furnish examples, have been spoken of in describing the piles and hut platforms. Dr. Heer's catalogue enumerates the Scotch fir, and mountain pine, the spruce and silver firs, the juniper, the yew, the oak, the hornbeam, the alder, the birch, more than one species of willow, the ash, holly, spindle tree, berry-bearing alder, and mountain ash. "At Robenhausen there were found portions of twigs, and remains of the leaves of the mistletoe, the sacred plant of the Gauls." In addition to the forest trees and their dependants, the lake dwellings have furnished mosses—used, no doubt, as bedding and for stopping holes in the hut walls; funguses, viz., the common tinder fungus, "which occurs in nearly all the lake dwellings, and was probably used for procuring fire," and the oak agaric; and a long series of water and marsh plants, such as charæ, reeds, sedges, flags, pond weed, water pepper, hog's fennel, white and yellow water-lilies, water-crowfoot, and others.

The world of fact and speculation thrown open by these last-named discoveries is sufficiently marvellous; but it is outdone, if possible, by the resurrection of animal being, which has followed from the dredging of the lake-beds, and by the light which this resurrection and its attendant

phenomena shed upon the manners, life, and circumstances of the lake dwellers. The quantities of animal bones found in some of the lake dwellings is almost incredible. An extract or two from Dr. Keller or his authorities will serve at once to illustrate this remark, and to prepare the way for further statements as to the species of animals whose remains have been found in the settlements, and as to the conditions under which they are met with. Speaking of the Robenhausen settlements, Dr. Keller says :—

“The animal kingdom is more largely represented here than in any other settlement; the bones are often found together in heaps of from fifty to one hundred pounds; from their weight some of them have sunk eight or ten inches into the bottom of the lake. As one hundred weight of bones were gathered in the Aa brook canal alone, the mass of animal remains buried in the whole colony must be immense. Scales of fish are found everywhere in great abundance.”—Pp. 48, 49.

Again, M. Uhlmann describes the animal relics at Greng, on the Lake of Morat, thus :—

“The quantity of bones was so large that M. Gaberel had them carted away in carts. This quantity was made up of undefined fragments, broken and hewn as if in a butcher's shop. . . . About one-third of the whole weight of bones consists of the remains of horned cattle. . . . The marks of the teeth of mice may often be seen on the stags' horns. . . . Mixed with the bones, and sometimes in the mud found in the hollows of the marrow-bones, I noticed many freshwater shells. . . . The heaps of bones very frequently show the marks of the celt upon them, and also the incisions made by sharp knives, especially the long bones where the ligaments and tendons had to be separated when the animal was cut in pieces. Many of them also show the marks of the teeth of carnivora.”—Pp. 187—189.

The bones thus described by M. Uhlmann were those of the *urus*, or *bos primigenius*; the ox, male and female; the small marsh cow; the sheep and goat; the deer, roe, and elk; the common hog, the wild boar, and the marsh pig; the great bear (*ursus arctos*); the dog, fox, hedgehog, and beaver. With these were associated the small bones of a frog—a unique specimen—also scales of the perch and other fish, and the vertebræ of what seemed to be a pike.

In like manner M. Lachmann writes respecting the animal remains at Nussdorf :—

“The bones, horns, and teeth belonged to the horse, cow, marsh-cow, stag, roe, sheep, marsh pig, bear, dog, wolf, lynx, hedgehog and beaver; remains of the pike and other fish were also met with. The

bones are seldom found whole; a large number of the long bones had been opened lengthwise [doubtless to get at the marrow]; the broad and short bones had been broken to pieces. On some specimens are still to be seen traces of the use of stone implements in the shape of notches and incisions. Some of the animals' skulls have a hole made in the parietal bone, probably to extract the brain."—P. 112.

Besides the animals named in these extracts, the various settlements have yielded remains of the bison or aurochs, the ibex, wolf, marten, badger, polecat, weasel, hare, and others. Birds are represented by the eagle, falcon, crow, owl, starling, pigeon, crane, stork, heron, swan, goose and duck—some of them, as the falcon, crow, and duck, in several species. The toad has been met with, as well as the frog; and salmon, carp, and a few other fishes, must be joined with the pike as relics of the class to which they belong. Several of these animals occur but seldom. The ibex has only been found at Meilen; the mouse only at Robenhausen; the hare only at Robenhausen and Moosseedorf. Most of the birds and fishes have been discovered at one or two stations alone. Bones of the urus, aurochs, boar, bear, and dog, with those of the deer, ox, goat, sheep, and pig, are found in great abundance. It is remarkable, too, that in several of the settlements masses of the dung of domestic animals have been met with—often in a carbonised state—so situated as to show that the lake dwellers kept their cattle upon the hut-platforms, not upon the shore, and that the stalls for them were distributed between the huts. At Robenhausen, M. Messikomer discovered in the peaty mud "horizontal beds from two to ten inches thick, varying in extent, composed entirely of the excrements of cows, pigs, sheep, and goats, together with the remains of the litter they had used. . . . The litter for the cows consisted chiefly of straws and rushes; that for the smaller animals was of sprigs of fir and twigs of brushwood. In these masses of excrements may be noticed the chrysalis shells of the insects which are so numerous at the present day in the manure found in the cattle-sheds."

We cannot now attempt to paint the picture of the manners and life of the lake dwellers, for which this resuscitated fauna and flora of their times, with all its manifold relations to the human population, furnish so ample materials. Very many of the facts above recited suggest their own interpretation, and of themselves depict in vivid colours the condition and habits of the pre-historic men. It will suffice to say that they were manifestly at once a hunting, fishing, and agricultural people; that they domesticated and sheltered, side by

side with their own dwellings on the waters, a number of animals still holding the first place among the herds and flocks of Switzerland and Europe in general; and that, while the geological features of the lake country were pretty much what they are in our own day, the vegetable and animal world surrounding the pile builders, with some notable exceptions, was the existing world as it is known in the neighbourhood of Zürich, Berne, and Geneva.

Perhaps the supreme puzzle belonging to the case of this mysterious people is the fact, that scarcely any remains of their persons are anywhere to be met with. No burying-place on shore has ever been found attached to any of the settlements; and either no human bones whatever have been dredged out of the relic beds, or such as have been discovered have been too few and fragmentary to throw much light upon the subject. Perhaps the most important discovery of this kind is the one at Greng, of which M. Uhlmann says:—

“Remains of human bones have been dug up at several points in the area of the lake dwelling, and at a considerable depth. M. von Bonstetten possesses a perfect frontal bone of a boy hardly come to puberty. In the collection of the Count de Pourtales there are similar specimens, with (if I mistake not) pieces of the cranium; and I have in my possession a left femur and a right humerus, the first that of a middle-sized slender individual, probably a female, the latter of a somewhat younger person. The epiphyses are wanting in these two bones, both above and below, and the ends exhibit clear and indubitable traces of gnawing by some carnivorous animal, but whether by a small bear, or a great dog, or other beasts, can hardly be decided. As far as can be judged from a superficial examination, none of the portions of the skull mentioned above exhibit any savage types, for the forehead is regularly arched and is considerably high.” —Pp. 188, 189.

Fragments of a human skull and ribs were dug up at Meilen. Sippligen furnished a parietal bone, the only trace of the human skeleton yet met with on the Lake of Constance. “Amongst an extraordinary number of bones” of various animals found at Concise, there were “only one fragment of an adult human skull, the frontal bone of a child, and a lower jaw with the second great molar tooth springing up.” Last of all Marin has supplied a basketful of human remains, probably from eight individuals; among them is a skull now in the museum of M. Desor, a drawing of which would have been a valuable addition to Dr. Keller’s large and interesting body of illustrative plates. As to the personal build of the men of the Swiss lake dwellings, however, we

must needs, for the present, put up with ignorance. Whether the bulk of their remains be buried under the glaciers, as has been suggested, or not, we see no reason why future discoveries in the lake beds themselves should not enable us to reconstruct in full the osseous framework of this pre-historic type of our species.

Meanwhile, there comes up with great force of interest the question of the era, origin, and relations of this vanished population of the waters. Who were the lake dwellers? When did they first settle in Switzerland? How long did they continue there? And what has become of them?

In dealing with these and similar inquiries, Dr. Keller has been careful not to tread in the steps of some who have gone before him. While holding the prime articles of the faith of modern European geologists and antiquarians, he is much more discriminating in his use and application of them. He recognises, for example—as we think rightly—the general fact, that there were three successive periods in the pre-historic development of the civilisation of Western Europe; that there was a period, the most ancient of the three, when the population had no use of metals—their implements and weapons of all kinds being manufactured out of stone, bone, horn, and wood; that this era was followed by another, in which bronze became known, and by degrees took the place, to a great extent, of the older and simpler materials; and that bronze, in its turn, was superseded, after a considerable lapse of time, by the knowledge and paramount employment of iron; that, in fact, the Scandinavian doctrine of the ages of stone, bronze, and iron represents a reality, and that, under certain restrictions and modifications, it may be made to subserve the interests of historical and chronological science. But in applying this well-known theory to the case of the lake dwellers, he speaks with much greater reserve than M. Troyon; indeed, his speculations on all the points to which we have just adverted are marked by a caution and good sense which are much to be commended. Our space will not admit of our going at large into Dr. Keller's argument. We must content ourselves with stating briefly what seem to be the main issues to which his facts compel us.

1. It is quite evident, whoever the lake dwellers were, that they continued to occupy their settlements in times which are strictly historical. The Roman remains found at Marin and elsewhere—remains occurring under precisely the same con-

ditions as the mass of the lake dwelling relics—are conclusive evidence that such was the fact.

2. While it is probable that fear of enemies had much to do with the original establishment of the lake dwellings, appearances are strongly against the hypothesis of M. Desor and others, who will have the settlements to be partly magazines and arsenals, partly places of refuge or of occasional meeting for the people of the main land. We entirely agree with Dr. Keller and Mr. Lee, that this theory of temporary abode can never be sustained. The labour expended on the substructures; the erection of separate huts, and the accommodations made in them for the convenience of separate families; the keeping of the cattle on the house-platforms; "the repeated repair and re-erection of the settlements after having been burnt;" the relic beds, lying one above the other, with their enormous quantity of bones and remains of domestic implements; the character of the fruits and seeds, which belong to the whole circle of the seasons; "the non-existence on any of the shores or banks near the lake dwellings of the stone age of any similar remains;" all go to prove that the so-called lake dwellers really made the settlements their homes, and that they were the chief theatre and sphere of their life, year after year, and generation after generation. What became of their dead is a mystery; but it is not greater under Dr. Keller's exposition of the use of the settlements, than it is under the theory which he confutes.

3. The lake dwellings are not all of the same era. They have a chronology; and, while almost wholly pre-historic, belong some to a remoter, some to a comparatively recent age. It would be utterly unscientific and arbitrary to assume that the settlements in which stone implements are found were first formed; then those in which the implements are of bronze; then, last of all, those in which iron implements are seen to obtain. For, in the first place, no such hard lines of distinction as this doctrine would draw among the settlements exists in fact; and, secondly, it would be quite conceivable that the settlements, having been all established at one and the same epoch, the people inhabiting them passed through successive phases of civilisation, and, having begun as workers in stone, became subsequently workers in bronze and iron, as they made acquaintance with these metals through barter and through direct and indirect communication with foreign tribes and races. The fact, however, adverted to under the last head—namely, that, in certain localities, settlements are found built upon the tombs of former settle-

ments, is clear demonstration that distance in time divided the erection of some of the lake dwellings from the erection of others of them. This is very fully illustrated by M. Messikomer's report on the Robenhansen settlement, from which it appears that this settlement is a triple one, and consists of three distinct settlements, the remains of which are piled one on the top of the other, the lowermost and next above it having been destroyed by fire previous to the driving of the third and topmost series of pile foundations. And when we couple with this the consideration that, where bronze and iron tools were in use, the lake dwellings run into deeper water than where they are distinctively of stone, not only is a chronological period established—as distinguished from a single epoch—but the theory is favoured which looks upon a stone settlement like Wangen as, *ceteris paribus*, older than a bronze one like Morges, and a bronze one like Morges as, *ceteris paribus*, older than an iron one like Marin. How the chronological scale is to be graduated, and where we are to fix in time the original establishment of pile settlements in Switzerland, are quite different questions, and questions which we think Dr. Keller is wise in postponing to a more advanced stage of our knowledge.

4. We find no scientific compulsion, however, which insists upon a very enormous antiquity for the pile dwellings. We do not admit this compulsion in view of the question of the antiquity of the human race as a whole. It may be perfectly true—we suppose it cannot be honestly denied—that man has co-existed in Western Europe with the mammoth, the rhinoceros tichorinus, and other extinct mammals. But there is another explanation of this phenomenon besides the theory which runs man's age in the earth up into a dozen or twenty millenniums beyond the starting points of history. Suppose, instead of man being so much older than we used to think him, it should turn out that our mammals are so much younger, and that the rhinoceros and mammoth period must be brought lower down, and not the human period pushed further back. So far as we know, science has not shown the improbability of this hypothesis; and, until it is proved untenable, we hold it as, in view of everything, a more scientific solution of the question in debate than that furnished by its rival. Here, however, neither Robenhansen nor any other phenomena with which we have to do demand or even need a space of time greater than some one or two thousand years before the Christian era. While we believe, with Dr. Keller, that a high antiquity must be assigned to the

so-called stone settlements, we are not surprised to hear M. Troyon, near the outset of his volume, say: "Let it be well understood, then, that the stone age—the relics of which are discovered in the lakes and in the graves—is recognised, in this work, as subsequent to the Mosaic deluge."

5. Further, we heartily endorse Dr. Keller's conviction, that the lake dwellers, whatever the time of their coming into Switzerland, and how great and numerous soever the changes which passed upon them during their long occupation of the country, were one and the same people. M. Troyon contends that the nationality of the stone people was quite distinct from that of the race which used the metal implements, and that the establishment of bronze and iron settlements upon the territory occupied by those of stone must be attributed to immigration and conquest. Dr. Keller argues, and we think triumphantly, that the facts of the case are strongly opposed to such a theory. Two considerations alone, both urged by Dr. Keller, appear to us to be fatal to the idea of successive and diverse populations. In the first place, it is incredible that two or three distinct races should all take to the unnatural and laborious way of living adopted by the pile dwellers. If bronze men or iron men had invaded the country of the stone men, and had made themselves masters of their settlements, it is morally certain they would most carefully abstain from the practice of living in huts built on the tops of timbers thrust into lake bottoms. And, again, if this were supposable, it is not supposable that such heterogeneous populations should drive their piles, and lay their platforms, and build and furnish their houses, and fashion their chief implements, as was the fact with the lake dwellers, all on the same model. Nothing is more certain than that the pile dwellings in every age are constructed in precisely the same manner; and how this circumstance can be made to tally with M. Troyon's theory, or with any other theory than that of the race-unity of the lake-dwelling people, we are at a loss to understand.

6. What, then, was the nationality of the Swiss lake dwellers? M. Troyon says that the men of bronze were Celts, and that the men of stone were a pre-Celtic population. Dr. Keller maintains that all were Celts together. His words in summing up are:—

"Believing as we do that the different settlements in what are called the stone, the bronze, and the iron ages, do not indicate a succession of races or the destruction of one people by another, but merely different grades of civilisation amongst one and the same

people, and a continued progress in handicraft ability; believing also that the lake dwellers did not form a peculiar caste, but, as is shown at Ebersberg and other places, belonged to the very people who at the same time lived on the main land; and knowing that according to the universal opinion of many French and English antiquaries, the bronze objects of a peculiar form and quite as peculiar ornamentation, such as those found in the settlements, both on the land and in the lakes, have always been attributed to the Celts; knowing also that history makes no mention of any other people but the Celts, who in the very earliest ages possessed the middle of Europe, and in later times received their civilisation from the Romans, we believe that it would be contrary to all the facts adduced to arrive at any other conclusion but this, that the builders of the lake dwellings were a branch of the Celtic population of Switzerland, but that the earlier settlements belong to the pre-historic period, and had already fallen into decay before the Celts took their place in the history of Europe."—P. 313.

To this finding—a finding which sorts exactly with all we know of the Helvetii and Celtic populations of Central Europe in general, whether from Cæsar or other ancient authorities—we give our cordial adhesion. Subject to the correction of future discovery, we hold with Dr. Keller, that our lake dwellers were a portion of that great Celtic migration which started, when the world was young, from the steppes and waters of High Asia; that they came, we know not when, but many hundreds of years before Christ, into Switzerland, bringing with them the dog, cow, sheep, goat, and horse, understanding agriculture likewise, and cultivating wheat, barley, and flax; that moved by some mysterious idiosyncrasy of race, and urged by pressure of external circumstances, they addicted themselves to the strange fashion of living which we have described in the foregoing pages; and that the habit of such a manner of life being formed, and corroborated by their lot, they continued age after age to follow their primeval customs, till the power and civilisation of the Romans came and abolished them for ever.

We are reluctantly compelled to omit all detailed notice of the lake dwellings which have been discovered and examined of late, south of the Alps and beyond the Swiss area, as well as of those half-cousins of the pile buildings, the so-called *crannoges* and *crannogs*—a kind of insular stockades found in different parts of North Britain and Ireland. For these we must refer our readers partly to chapters devoted to these two subjects in Dr. Keller's volume, partly to the valuable memoirs on the one and the other contained in the masterly works of Sir John Lubbock and Sir Charles Lyell. It will be

enough to say here, that both the stockade structures on the one hand, and the actual pile buildings of Savoy, of Lombardy, of Bavaria, of Mecklenburg, &c. on the other, all point in one direction, and serve to add certainty to the conclusions at which Dr. Keller has arrived with respect to the Celtic origin and relationships of the Swiss lake builders.

Our best thanks are due to Mr. Lee for the judgment and care with which he has edited Dr. Keller's very valuable series of reports. He has opened to the view of Englishmen a new chapter in the hitherto unwritten history of human kind, and has furnished the devout and wise with fresh material for reflection on the marvellous character and government of Him whose judgments are unsearchable, and His ways past finding out.

ART. VI.—*Lives of Boulton and Watt.* Principally from the original Soho MS.: comprising also a History of the Invention and Introduction of the Steam-engine. By SAMUEL SMILES, Author of Industrial Biography, &c. London: John Murray, Albemarle Street. 1865.

In this able and interesting volume we have a valuable addition to other works of a kindred description, upon which Mr. Smiles has bestowed so much patient industry of research, and in the execution of which he has given us admirable examples of an important department of English literature. They record the achievements of men mostly self-taught, who will always be reckoned among the first benefactors, not only of their country, but also of their race. "Who are the great men of the present age?" asked a leading member of Parliament some time ago in the House of Commons. "Not your warriors, not your statesmen," was the reply, "they are your engineers."

In Mr. Smiles' former volumes we have an account of those immense works of drainage by which thousands of acres of land have been reclaimed from sea, and fen, and bog; a history of the growth of our inland communication by means of roads, canals, bridges, and railways; and a description of the construction of our lighthouses, breakwaters, docks, and harbours, forming altogether memorials equally interesting and enduring of such names as Vermuyden, Myddleton, Perry, Brindley, Smeaton, Telford, and the Stephensons. And now, in the "*Lives of Boulton and Watt*," we are made familiar with men whose inventive skill, unwearied industry, and brave struggles through years of almost overwhelming difficulties, succeeded in producing mechanical contrivances in the application of steam-power, to which England at the present moment chiefly owes her material greatness, and which have been among the principal agents in the progress of general civilisation.

Like electricity, the power of steam was observed by ancient philosophers long before the Christian era, but how to "harness" and utilise it was a problem not solved until within the last hundred years; and in consequence of the imperfect state of dynamical science in the middle of the last century, some of the most important industrial occupations of this country were fast coming to a standstill.

Hero, or Heron, a Greek physician, who lived at Alexandria, about B.C. 100, wrote a treatise in which he gave a description of various methods by which steam or heated air might be made to produce mechanical effects. He was the pupil of Ctesibius, the inventor of various pneumatic and hydraulic machines; one of which seems to have been similar in principle to the air-gun, and the other, working with piston and cylinder, like what we now call a forcing-pump. Among the contrivances mentioned by Hero in which steam was used as a motive power, was a sort of toy, in which a globe was made to spin round upon its axis; and, in fact, this may be considered to embody the true idea of a steam-engine.

A translation of Hero's treatise appeared in Italy in the middle of the sixteenth century; the recently-introduced art of printing helped to bring the long-forgotten work into notice; and, as editions of it were published in various European languages, the attention of the scientific and curious was attracted to the novel experiments which it described.

From this period to the time of James Watt, successive discoveries and inventions of increasing value continued to bring out the capabilities of steam as a force of immense practical power and value. A pioneer in this line of progress was Edward, second Marquis of Worcester. He was born in the year 1601, and Mr. Smiles speaks of him as "one of the first and most illustrious of a long line of unfortunate inventors."

This nobleman never seemed weary of mechanical pursuits. When a young man travelling on the Continent, he was mostly attracted to those places where works of ingenious construction were to be met with. A faithful adherent of the House of Stuart, he endured severe trials in the form of imprisonment, exile, and confiscation of property; but neither loss, nor disappointment, nor delay, could long divert him from his favourite occupations. His attention was mainly directed to the subject of steam in its relation to the science of hydraulics; and after several years of patient application, he succeeded in making what he called a "water-commanding engine." As its name indicated, the object of this engine was to raise water, and one was erected for this purpose on the banks of the Thames not far from Lambeth Palace.

The marquis beguiled two weary years of imprisonment in the Tower by writing descriptions of "his many ingenious devices, which he afterwards published in his *Century of Inventions*." According to Mr. Smiles, these descriptions are

often very obscure, failing to explain the processes by which particular results were produced. This is especially the case with his water-commanding engine. Mr. Watt was of opinion that "the expansive power of steam was the principle on which the engine worked;" but he considered the account of it so unintelligible, that "any inventor desirous of constructing a steam-engine will have to begin again at the beginning."

Among the patents which the ever-busy marquis took out were "an engine to give security to a coach, and a boat to sail against wind and tide."

After his death the engine on which he had bestowed so much labour and expense passed out of notice; but the idea of the steam or fire engine, as it was then called, was revived by Sir Samuel Morland, Master of Mechanics to Charles II. He was the inventor of the capstan for raising ships' anchors, and was expert in the construction of pumps and hydraulic engines.

"He also devoted himself to the improvement of the fire-engine, in which he employed a cylinder and piston, as well as a stuffing-box. Towards the later years of his life, he applied himself more particularly to the study of the powers and uses of steam. It is not, however, known that he ever erected a steam-engine. If he did, no account of its performances has been preserved."—Pp. 29, 30.

Morland died in 1695; and the next name famous in the history of the steam-engine, to which Mr. Smiles refers, is that of Dr. Dionysius Papin. Papin was a French refugee, and a man eminently skilled in natural science. His distinguished attainments soon brought him into notice. The celebrated Boyle and other scientific men received him into their circle, and obtained a situation for him in connexion with the Royal Society. A few years afterwards he accepted an invitation to fill the Chair of Mathematics in the University of Marburg in Germany. While occupying this office he maintained a correspondence with England,—

"And communicated to the Royal Society the results of the experiments in physics, which he continued to pursue. It had occurred to him, as it had done before to Hautefeuille, that the explosion of gun-powder presented a ready means of producing a power to elevate a piston in a tube or cylinder, and that when so raised a vacuum could be formed under the piston by condensing the vapour, and so ensuring its return by the pressure of the atmosphere. He thought that he might thus be enabled to secure an efficient moving force. But it was found in practice that the proposed power was too violent as well as uncertain, and it was shortly given up as impracticable."—P. 33.

One of Papin's chief projects was the construction of a boat to be propelled by steam-power. He expended great energy in the attempt to work out the idea; but the difficulties in the way of fully accomplishing it, overmastered him. Disappointment followed disappointment, until, "worn out by work and anxiety, the illustrious exile died; and it was left for other labourers to realise the great ideas he had formed as to locomotion by steam-power."

While Papin was experimenting on steam in Germany, Thomas Savery was similarly engaged in this country, and to him "is usually accorded the merit of having constructed the first actual working steam-engine." He was educated for the profession of a military engineer, and employed much of his spare time in mechanical experiments. A man like Savery could scarcely have been altogether unacquainted with what had already been attempted in the way of experiments in steam; but it is not probable that he had obtained information of much practical service. It has been thought that he may have gathered some suggestions from the Marquis of Worcester's *Century of Inventions*. But a trustworthy authority tells us that the—

"First hint from which he took the engine was from a tobacco-pipe, which he immersed in water to wash or cool it; when he discovered by the rarefaction of the air in the tube by the heat or steam, and the gravitation or pressure of the exterior air on the condensation of the latter, that the water was made to spring through the tube of the pipe in a most surprising manner; and this phenomenon induced him to search for the rationale, and to prosecute a series of experiments which issued in the invention of his fire-engine."—P. 49.

Savery's engine was employed for various purposes; but the most important was that of drawing water from mines and coal-pits. Several were erected in Cornwall, and their practical value was soon evident, for they enabled the miners to descend to the deeper ores, which hitherto had been simply so much buried treasure.

We now come to a name which is the connecting link between the earliest experiments on the steam-engine and James Watt. This was Thomas Newcomen, an ironmonger and blacksmith of Dartmouth. According to one story formerly current in Dartmouth, and generally believed,—

"Newcomen conceived the idea of the motive power to be obtained from steam by watching the tea-kettle, the lid of which would frequently rise and fall when boiling; and, reasoning upon this fact, he

contrived, by filling a cylinder with steam, to raise the piston, and by immediately injecting some cold water, to create a vacuum, which allowed the weight of the atmosphere to press the piston down, and so give motion to a pump by means of beams and rods."—P. 61.

According to another account, Newcomen obtained drawings of Savery's engine, and then introduced various improvements suggested by his own mechanical sagacity. Whichever version of the affair may be accepted, whether that which makes Newcomen an entirely original inventor or a skilful improver, it is certain that he was a man of great ingenuity, and that his engine pushed on the invention another important stage. It was known as the Newcomen engine, and for some years was extensively employed as a pumping machine in the principal mining districts of the country.

One great drawback to the discoveries and inventions hitherto made was the lack of proper mechanism through which the new power might safely and advantageously work; and even when, to a certain extent, suitable contrivances had been devised, the want of skilled mechanics and proper tools often made the whole thing a failure. Not only must there be a correct knowledge of the laws of motion and heat, and a scientific and mechanical genius ready in the invention of appliances through which these two laws may act; the hands of the expert artizan are equally necessary. It is seldom that all these qualifications meet in the same individual. They were combined to a considerable degree in Newcomen; but we have now to speak of a man in whom they were so remarkably found that his name stands out more conspicuously in connection with the progress of the steam-engine than any other.

This man was James Watt, the honour of whose birth-place belongs to Greenock. During his earlier years his education, owing to the extreme feebleness of his constitution, was entirely conducted at home. To amuse hours which would otherwise have passed away wearisomely, debarred as he was from out-door play with more robust children, his father supplied him with a few carpenters' tools, which he learned to handle with great dexterity. He would take his toys to pieces, and then, with an ingenuity prophetic of his future career, construct others out of the separate parts. Another favourite occupation was drawing on paper with a pencil, or on the floor with a piece of chalk; and it is related of him that one day, when only six years old, he was discovered tracing lines on the hearth in an attempt to solve a problem in geometry.

When at length he was sent to school he did not at first make much progress, partly, perhaps, in consequence of his "almost continual ailments," and partly because he was not engaged with studies in which he took any particular interest. No sooner, however, was he placed in the mathematical class than his pre-eminent abilities appeared, and from that time he made rapid advance. His time out of school was pretty much occupied in drawing or in cutting or carving with his pen-knife, and making various articles with the carpenters' tools in his father's shop; so struck were the workmen with his skill that they often said, "little Jamie has got a fortune at his fingers' ends." Referring to his occupation and tastes at this early period of his life, Mr. Smiles observes,—

"He was, in fact, educating himself in the most effectual manner, in his own way, learning to use his hands dexterously, familiarising himself with the art of handling tools, and acquiring a degree of expertness in working with them in wood and metal which eventually proved of the greatest value to him. At the same time he was training himself in habits of application, industry, and invention. Most of his spare time was thus devoted to mechanical adaptations of his own contrivance. A small forge was erected for him, and a bench fitted up for his special use; and there he constructed many ingenious little objects, such as miniature cranes, pulleys, pumps, and capstans."—P. 91.

Nothing escaped his notice; whatever he saw in the shape of a scientific or mechanical instrument he would examine and re-examine until he understood as much as possible of its structure and purpose. He also paid much attention to natural philosophy, and became familiar with some of the leading principles and facts of chemistry and electricity. "His father had originally intended him to follow his own business; but having sustained some heavy losses, and observing the strong bias of his son towards manipulation, science, and the exact mathematics, he at length decided to send him to Glasgow, in the year 1754, when he was eighteen years old, to learn the trade of a mathematical instrument maker." On his arrival in Glasgow no master in the proposed line of business could be found, and after spending a few months with a "sort of Jack-of-all-trades," who was ingenious enough after a fashion, but from whom a youth like James Watt could not gain much instruction, it was resolved to send him to London, where at least the Glasgow disappointment of not finding a mathematical instrument maker was not likely to be repeated. The journey

was performed on horseback in company with a relation, and occupied about a fortnight, the young traveller's chest being sent by sea. Mr. Smiles gives the following entry found in an old memorandum book of the elder Watt:—

"To send James Watt's chist to the care of Mr. William Oman, ventener in Leith, to be shypt for London to ye care of Captain William Watson, at the Hermitage, London.

"Paid 3s. 6d. for wagon carriage to Edinbrough of chist.

Paid to son James 2l. 2s.

Paid Plaster and Pommet 1s. 4d.

Paid 4 dozen pencils 1s. 6d."

After encountering many unexpected obstacles, a situation was obtained for young Watt in the shop of Mr. John Morgan, a respectable mathematical instrument maker in Cornhill; and so great was his proficiency that before a year had elapsed he wrote to inform his father that he had made "a brass sector with a French joint, which is reckoned as nice a piece of framing work as is in the trade." In order to draw as little as possible upon his father, whose means had become somewhat straitened, he lived in the most frugal manner, and overtaxed his strength by sitting up at night doing extra work that he might obtain something towards his maintenance. This severe application to business soon began to tell upon his fragile constitution. "When he hurried to his lodgings at night his body was wearied and his nerves exhausted, so that his hands shook like those of an old man." Severe rheumatic pains and great depression of spirits continually distressed him, so that he was compelled to return to Greenock. A few weeks of recreation in his native air recruited his health, and his fifteen months in London had been so diligently improved that he proceeded to Glasgow to commence business for himself, being now in his twentieth year.

A very interesting account is given, in pages 105—108, of the difficulties which arose in his attempts to establish himself in Glasgow. As he was not the son of burgess, nor had served an apprenticeship within the borough, the corporation prohibited him from opening a business in the place. In this emergency, Dr. Dick, Professor of Natural Philosophy in the University of Glasgow, for whom young Watt had repaired some mathematical instruments, took him under his patronage. An apartment in the inner quadrangle of the University was granted to him for a workshop, and the college not being within the jurisdiction of the guilds, the Greenock mechanic

was left to ply his craft without let or hindrance. A room fronting the High Street was also appropriated to him as a shop for the sale of his instruments. The trade of Glasgow, however, was then very limited, and Watt found that his own business would not afford him the means of subsistence. Ever ready with expedients, he took to map and chart selling ; and "although he had no ear for music, and scarcely knew one note from another, he followed the example of the old spectacle-maker, his first master, in making fiddles, flutes, and guitars." He advanced from one step to another, until he built an organ, into which he introduced various improvements, which gave the instrument so superior a tone and finish, that its qualities are said "to have elicited the admiration and surprise of musicians."

Watt industriously employed his spare time in close reading on various branches of natural and mechanical science, and cultivated a pretty extensive acquaintance with more general literature. His singular abilities and ardent inquiry won for him the friendship of the professors and students of the University, among whom was John Robinson, who afterwards became the Professor of Natural Philosophy at Edinburgh, and who enjoys the distinction of having first directed the attention of Watt to the subject of the steam-engine. It was not long before he had made himself familiar with what had already been accomplished in this direction, and while "reading up" on the subject, he began a course of self-suggested experiments. His first apparatus was of a very humble kind, and consisted of "apothecaries' phials for his steam reservoirs, and canes hollowed out for his steam pipes."

There was at this time in the University of Glasgow the model of a Newcomen engine, to which Watt obtained access. Speaking of this period, Mr. Smiles says:—

"In 1763, the little engine, which was destined to become so famous, was put into the hands of Watt. The boiler was somewhat smaller than an ordinary tea-kettle. The cylinder of the engine was only of two inches diameter and six inches stroke. Watt at first regarded it as merely a 'fine plaything.' It was, however, enough to set him upon a track of thinking which led to the most important results. When he had repaired the model, and set it to work, he found that the boiler, though apparently large enough, could not supply steam in sufficient quantity. The fire was urged by blowing, and more steam was produced, but still it would not work. Watt referred to his books, and endeavoured to ascertain from them by what means he might remedy the defects which he found in the model, but they could tell him nothing. He then proceeded with an

independent course of experiments, resolved to work out the problem for himself. In the course of his inquiries he came upon a fact which, more than any other, led his mind into the train of thought which at last conducted him to the invention of which the results were destined to prove so stupendous. This fact was the existence of latent heat."—Pp. 122, 123.

We have not space to describe the investigation which Watt at this point pursued; and, without entering into detail we cannot well explain the difficulty he had to overcome. The track which he followed led to the discovery that the chief expenditure of steam in the Newcomen engine was caused by the reheating of the cylinder after the steam had been condensed, the cylinder being thus cooled by the admission of the cold water.

"Watt, therefore, came to the conclusion that to make a perfect steam-engine it was necessary that *the cylinder should be always as hot as the steam that entered it*; but it was equally necessary that the steam should be condensed when the piston descended,—nay, that it should be cooled down below 100° , or a considerable amount of vapour would be given off, which would resist the descent of the piston, and diminish the power of the engine. Thus the cylinder was never to be at a less temperature than 212° , and yet at each descent of the piston it was to be less than 100° , conditions which, on the very face of them, seemed incompatible."—P. 124.

Watt plainly saw that until the necessity expressed in these "conditions" could be met, there was a rigid limit to further progress. Month after month he gave all the attention he could spare to the subject, and at length it occurred to him that a *separate condenser* would supply all that was required. The process of inquiry and invention which he pursued is given in a pleasant and instructive form in Mr. Smiles' volume, pages 127—135.

The difficulty that now arose in carrying out his invention was twofold. He had neither sufficient time nor sufficient money. His own business, never very remunerative, had suffered from the attention which had been diverted to the steam-engine. "What he wanted was capital, or the help of a capitalist willing to advance him the necessary funds to perfect his invention. To give a fair trial to the new apparatus would involve an expenditure of several thousand pounds; and who on the spot could be expected to invest so large a sum in trying a machine so entirely new, depending for its success on physical principles very imperfectly understood?"

At this juncture, Watt was introduced to Dr. John Roebuck,

the founder of the Carron Iron Works, who was also engaged in extensive mining adventures. Roebuck was not slow to appreciate the improvements which Watt proposed in the Newcomen engine; and, persuaded that ultimate success was certain,

"He undertook to pay debts to the amount of £1,000, which Watt had incurred in prosecuting his projects up to the present time, and also to provide the means of continuing experiments, as well as to secure a patent for the engine."—P. 141.

Although now possessing many advantages for pursuing his enterprise, Watt found himself hampered by various difficulties, for a description of which we must refer the reader to the eighth chapter of the work before us. One of his chief embarrassments arose from the want of skilled mechanics to execute his plans. Bad workmanship so baffled him that we are told he "had serious thoughts of giving up the thing altogether." Still, never quite in despair, he persevered, and in the early part of 1769, the specifications for the patent were lodged at the proper office. It is worthy of remark that it was in that year Arkwright took out the patent for his spinning-jenny.

A few months after this, mainly owing to the failure of his mining operations, Dr. Roebuck became so involved in pecuniary difficulties that he could render Watt no further help; for the present, the steam-engine business had to be laid aside, and Watt turned to engineering and surveying to obtain a livelihood. Before, however, entering upon the next important event in his career of invention we must turn our attention to a name which, although distinguished in itself, has acquired a wider renown from its association with that of Watt.

We refer to Matthew Boulton, the head of the great establishment at Soho. He was born at Birmingham, in the year 1728, and, in his earlier years, is spoken of as a "bright, clever boy." Those qualities of ingenuity, tact, and dauntless perseverance for which he was so famous soon began to show themselves. His father was engaged in various branches of Birmingham industry, which the son greatly improved, and in subsequent years largely extended.

"By the time he was seventeen he had introduced several improvements in the manufacture of buttons, watch-chains, and other trinkets; and he had invented the inlaid steel buckles, which shortly after became the fashion. These buckles were exported in large quantities to France, from whence they were brought back to England

and sold as the most recent productions of French ingenuity."—
P. 164.

At the time of his father's death Matthew Boulton was thirty-one years of age, and the property he then inherited, with the fortune he came into possession of on his marriage with the daughter of a wealthy country gentleman a year afterwards, was sufficient to raise him above all business employments. But leisure was not his ambition: he was happy only when actively engaged in manufacturing and mercantile pursuits, and, instead of retiring on his ample income, he preferred to employ it in enlarging his already extensive business operations.

He resolved to erect a manufactory which should be far above all existing establishments of a similar kind, both in the variety and superiority of articles produced, and in the higher facilities for producing them. This led to the purchase of a large piece of land, and the building of commodious and expensive premises at Soho, just outside the parish of Birmingham. Here a large mill was erected, the working power of which was obtained from a water-wheel, turned by a small stream, which there formed the boundary-line between the counties of Warwick and Stafford. Connected with this mill were numerous workshops, capable of accommodating upwards of a thousand workmen, and involving an outlay altogether of upwards of £20,000.

Steps were immediately taken to open up new connexions and agencies, both at home and abroad, and a large business was shortly established with many of the principal towns and cities in Europe in filagree and inlaid work, livery and other buttons, buckles, clasps, watch-chains, and various kinds of ornamental wares. Regardless of trouble and expense, Boulton endeavoured to obtain the best examples of Continental workmanship in "vases, cameos, intaglios, and statuary," together with the finest "specimens of medal-work," as models to form and educate the taste of the Soho artisans. A writer in one of the publications of the day indulges in a little smart satire on Boulton and his imitation of antique works of art, observing, "I should not wonder if some surprising genius at Birmingham should be tempted to make *Roman medals* and *tenpenny nails*, or *Corinthian knives* and *daggers*, and style himself *Roman medal* and *Etruscan tenpenny nail-maker* to the *Empress of Abyssinia*." Boulton, however, could afford to smile at these sallies. In both quality and finish, many of these imitations were of very beautiful execution, and accompanied, as they were, by

various productions of original ingenuity and skill, the fame of Soho rapidly spread, and the place maintained a world-wide celebrity, as the first of its kind, for more than half a century. Foreigners of distinction, when visiting this country, were accustomed to include Soho among the "lions," and many a warm tribute of admiration was paid to the genius and enterprise of Boulton by men of the highest culture and refinement. In one letter he says:—

"Last week we had Prince Poniatowski, nephew of the King of Poland, and the French, Danish, Sardinian, and Dutch ambassadors; this week we have had Count Orloff, one of the five celebrated brothers who are such favourites with the Empress of Russia; and only yesterday I had the Viceroy of Ireland, who dined with us. Scarcely a day without a visit from some distinguished personage."—Pp. 181, 182.

Boulton was honoured with the special patronage of the royal family, and was accustomed to attend at the palace with specimens of his manufacture. On one of his visits to London, he wrote to his wife: "The king hath bought a pair of capolets, a Titus, a Venus clock, and some other things, and inquired this morning how yesterday's sale went. I shall see him again, I believe. I was with them—the queen and all the children—between two and three hours. Never was man so complimented as I have been;" he drily adds, "but I find that compliments do not make fat, nor fill the pocket." Describing a subsequent visit, he speaks of the queen as "extremely sensible, very affable, and a great patroness of English manufactures." "Of this," he observes, "she gave me a particular instance; for, after the king and she had talked to me for nearly three hours, they withdrew, and then the queen sent for me into her boudoir, showed me her chimney-piece, and asked me how many vases it would take to furnish it; 'for,' said she, 'all that china shall be taken away.' She also desired that I would fetch her the two finest steel chains I could make. All this she did of her own accord, without the presence of the king, which I could not help putting a kind construction upon."

A great difficulty at Soho was want of sufficient mill-power. Two water-mills were employed in rolling, polishing, grinding, and turning various sorts of lathes; but often during summer droughts the stream on which they were dependent was insufficient to drive the water-wheels, and much inconvenience and delay were occasioned. A horse-mill was afterwards erected as an auxiliary force; but this was found to be a very

expensive process, employing six to ten horses at a cost of six or seven guineas a week. Boulton was thus led to turn his attention to steam, and thought of putting up a Newcomen engine.

In the year 1766, at the time Watt was busy with the engine which he patented, Boulton entered into correspondence with the celebrated Benjamin Franklin on the subject of steam-power, and he obtained a model of an engine for the purpose of trying experiments. He also corresponded with Dr. Roebuck, who gave him a description of the improvement in the "fire-engine" upon which Watt was then engaged. In the following year Watt called at Soho on his return to Scotland from London, and he and Boulton were much pleased with each other. Quick to read character and discern real ability, Boulton formed a high opinion of the inventive genius and practical sagacity of his Scottish visitor, who, on his part, was equally struck with the marvellous mechanical arrangements which he saw at Soho, especially admiring the finish of the tools and the delicacy of skill with which they were handled. He could plainly perceive that, with such instruments of labour, in the place of the "villanous bad workmanship" which so tired his patience and delayed his progress, he might calculate on reaching a speedy and complete success. A correspondence shortly took place between Boulton and Roebuck, by which arrangements were made for Watt to send drawings of his engine to Soho, in order "to have one constructed for the purpose of exhibiting its powers." Patterns were accordingly made and sent to Coalbrookdale, a celebrated ironfoundry in Shropshire, to be cast; but the castings were so badly executed that they could not be used. An ironfounder at Bilston was then employed, but with no better success. The experiment at Soho was for the present abandoned, and Watt and Roebuck renewed the trial in Scotland. Roebuck's insolvency soon interposed an insuperable obstacle to any further prosecution of the affair on his part, and brought Watt to a stand-still. After an interval of about three years, Boulton was induced to take up the matter in good earnest. In May, 1774, Watt came to Birmingham, and a connection was established between these eminent men which extended over a period of thirty-five years.

Referring to their respective qualities, Mr. Smiles remarks:—

"Had Watt searched Europe through, probably he could not have found a man better fitted than Matthew Boulton for bringing his

invention fairly before the world. Many would have thought it rash on the part of the latter, burdened as he was with heavy liabilities, to engage in a new undertaking of so speculative a nature. Feasible though the scheme might be, it was an admitted fact that nearly all the experiments with the models heretofore made had proved failures. It is true Watt firmly believed that he had hit upon the right principle, and he was as sanguine as ever of the ultimate success of his engine. But though inventors are usually sanguine, men of capital do not take up their schemes on that account. Boulton, however, among his many other gifts, possessed an admirable knowledge of character. In Watt he had recognised on his first visit to Soho, not only a man of original inventive genius, but a plodding, earnest, intent, and withal an exceedingly modest, man; not given to puff, but on the contrary rather disposed to underrate the merit of his inventions. Different though their characters were in most respects, Boulton at once conceived a hearty liking for him. The one displayed in perfection precisely those qualities which the other wanted. Boulton was a man of ardent and generous temperament, bold and enterprising, undaunted by difficulty, and of almost boundless capacity for work. He was a man of great tact, clear perception, and sound judgment. Moreover, he possessed that indispensable quality of perseverance, without which the best talents are of comparatively little value in the conduct of important affairs. While Watt hated business, Boulton loved it. He had, indeed, a genius for business,—a gift almost as rare as that for poetry, for art, or for war. He possessed a marvellous power of organisation. With a keen eye for details he combined a comprehensive grasp of intellect. While his senses were so acute, that when sitting in his office at Soho, he could detect the slightest stoppage or derangement in the machinery of that vast establishment, and send his message direct to the spot where it had occurred, his power of imagination was such as enabled him to look clearly along extensive lines of possible action in Europe, America, and the East. But Boulton was more than a man of business; he was a man of culture, and the friend of cultivated men. His hospitable mansion at Soho was the resort of persons eminent in art, in literature, and in science; and the love and admiration with which he inspired such men affords one of the best proofs of his own elevation of character."—Pp. 199—201.

In the higher-class mechanics and ample resources of Soho, Watt enjoyed advantages which hitherto had not been within his reach, and in less than seven months he wrote to his father, at Greenock, "The fire-engine I have invented is now going, and answers much better than any other that has yet been made."

It now became necessary to seek an extension of the patent; nearly half the period for which it had been originally granted had passed away; no remuneration had yet been obtained for

several years of anxious and wearisome toil on the part of Watt; a large outlay of capital, in providing tools, machinery, and buildings, would yet be required, and Boulton, with good reason, hesitated to incur so much expense unless the costly experiment could be properly protected. It was, however, by no means certain that a renewal of the patent-right would be obtained, but it was certain that an application for this privilege would have to encounter a determined opposition. While things were in this precarious and unsatisfactory state, Watt received the offer of a situation under the Russian Government, at a salary of £1,000 a-year. The spirit of kindness, and the disinterested friendship displayed by Boulton when this proposal was under consideration, decided Watt to remain at Soho.

In order to secure an extension of the patent it was, at that time, necessary to apply for an Act of Parliament; the requisite measures were accordingly taken, and the bill was brought in on the 28th of February, 1775. As had been anticipated, a powerful resistance was offered to what various "interests" stigmatised as a hurtful "monopoly;" sympathy with these views was enlisted within Parliament, and the opposition was supported by the great Burke.

To combat these objections Watt drew up a "case" for distribution among the members of the House of Commons, in which the arguments sustaining his claim were put with so much straightforward, manly sense, that the bill was passed, and the patent-right was extended over an additional term of twenty-four years.

About this time John Wilkinson, an eminent iron-founder, and the builder of the first successful iron vessel, discovered a method of boring the cylinder of the steam-engine, and thereby improving the action of the piston; other improvements were also introduced, still further raising the hope of success, and now, legally secured by the renewal of the patent, "arrangements were at once set on foot for carrying on the manufacture of engines upon an extensive scale."

Some of the first orders which came to Soho were sent from Cornwall, where mining operations were still greatly impeded for want of machinery of sufficient power to keep the water in check. The two first engines erected in that county were "for Wheal Busy, near Chacewater, and for Tingtang, near Redruth." Aware of the jealousy with which many would regard this rival of the Newcomen engine, and how important it was that first impressions should be as favourable as possible, it was resolved that the Soho engines

should be put up under Watt's immediate superintendence. That at Chacewater was ready first, and people came from all parts to see it start. Not a few were incredulous of its power; but it proved a complete success, astonishing everybody by its steady action, and the amount of work it could accomplish. Watt reported, "All the world are agape to see what it can do." And again, "The velocity, violence, magnitude, and horrible noise of the engine give universal satisfaction to all beholders, believers or not. I have, once or twice, trimmed the engine to end its stroke gently, and to make less noise; but Mr. Wilson cannot sleep without it seems quite furious, so I have left it to the engine-men; and, by-the-bye, the noise seems to convey great ideas of its power to the ignorant, who seem to be no more taken with modest merit in an engine than in a man."

The engine had now fairly established its reputation in Cornwall, and promised to be of immense advantage in the working of the mines. Referring some time afterwards to the service which it had rendered, Watt said, "If we had not furnished the miners with more effectual means of draining the water, almost all the deep mines would have been abandoned before now."

The pecuniary demands made from so many quarters upon Boulton brought him into serious embarrassment. Large as was his capital, it was scarcely equal to carry on the vast concern to which Soho had grown, even before the engine-manufacturing business was undertaken. Since then a considerable sum had been sunk in the new department. Indeed, in this line, it was all "out-go" down to the year 1785, which, reckoning from the erection of the first engine, included a period of nine years; and we are told that "it was estimated that upwards of £40,000 were invested in the engine-business before it began to yield profits."

The liabilities of the firm were so heavy, that but for Boulton's courageous, unflinching disposition, the establishment at Soho must have collapsed. Watt, constitutionally timid, and plagued with chronic dyspepsia, could see nothing before them but bankruptcy and ruin, and Fothergill, another partner, was equally disheartened and alarmed. To avert the crisis which seemed impending, Boulton "sold the estate which came to him by his wife for £15,000;" further sums were raised by mortgages; money was borrowed largely from wealthy personal friends; and repeated advances were made by his bankers, until his account was overdrawn to the amount of £17,000. Boulton's partners urged that they

should at once suspend payment and "wind-up." But the head of the firm would not listen for a moment to such a proposal, assuring them that better days would come. Nor was he mistaken; those better days did come, but there was a long interval of sharp struggling, which needed all those qualities of buoyancy, resolution, perseverance, and readiness of expedient, for which Boulton was so remarkable.

In the midst of these anxieties, and while giving himself to business with the energy expected only from a man in vigorous health, Watt was suffering from grievous attacks of sickness. In writing to Boulton he complains of being "stupid and ill, and scarcely able to think." Referring to some work with which he was then occupied, he says, "I tremble at the thought of making a complete set of drawings. I wish you could find me out a draughtsman of abilities; I cannot stand it much longer." Elsewhere he says, "The care and attention which our business requires make me, at present, dread a fresh order with as much horror as other people with joy receive one." And yet he kept almost ceaselessly plodding on, not only in altering and improving the construction of the steam-engine, but giving his attention to other branches of mechanical art. Among other contrivances which his fertile genius produced was a "letter-copying machine," which "gradually and steadily made its way, until at length there was scarcely a house of any extensive business transactions in which it was not to be found."

We are, of course, unable to do more than indicate a few of the principal inventions of a man of whom Mr. Smiles happily observes that he had an "irrepressible instinct to invent." One of these, however, we must not omit to notice; it belongs to the steam-engine, and is called the "governor," a beautiful piece of mechanism, combining ornament in appearance with great practical utility; its object being to regulate the amount of steam which enters the cylinder from the boiler. When the pressure of steam would become so great as to endanger the safety of the engine, this apparatus partially closes a valve which diminishes the supply of steam; and when the amount of steam admitted into the cylinder is insufficient to drive the engine, the governor opens the valve, and thus increases the supply. This contrivance for regulating the speed of the engine has always been greatly admired, and so perfect was it in its original conception and execution, that since then it has undergone no improvement.

Boulton and Watt were often put to great annoyance and

perplexity by foreign agents, who unscrupulously attempted to bribe and decoy away their most skilled workmen. Nor were those lacking among their countrymen who were ever ready to resort to any means for "worming out the secrets of the manufactory." Mr. Smiles gives the following instance :—

"While the model of the crank engine was under construction at Soho, in the summer of 1780, a number of workmen met one Saturday evening, according to custom, to drink together at the 'Waggon and Horses,' a little old-fashioned, low-roofed, roadside public-house, still standing in the village of Handsworth. The men were seated round the little kitchen-parlour, talking about their work, and boasting, as men will do over their beer, of the new and wonderful things which they were carrying forth in their shops. Dick Cartwright, the pattern-maker, was one of the loudest of the party. He was occupied upon a model for the purpose of producing rotary motion, which he declared would prove one of the best things Mr. Watt had ever brought out. The other men were curious to know all about it; and to illustrate the action of the machine, Cartwright proceeded to make a rude sketch of the crank upon the wooden table with a bit of chalk. A person who sat in the kitchen corner in the assumed garb of a workman, drank in greedily all that the men had been saying, for there were many eavesdroppers constantly hanging about Soho. Watt himself had never thought of taking out a patent for the crank, not believing it to be patentable; but the stranger aforesaid had no such hesitation, and it is said he posted straight to London and anticipated Watt by procuring a protection for the contrivance."—Pp. 288, 289.

The rotary motion above referred to, was a method to secure circular motion without using the crank. The plan ultimately adopted was the invention of William Murdock, "commonly known as the sun and planet motion."

Here and there one of these original rotative engines with the "sun and planet motion" may still be seen at work. Numerous orders were received for them at Soho for home purposes, and some were purchased for driving saw-mills in America, and sugar-mills in the West Indies. Pumping-engines were also supplied to France, Spain, and Italy.

We have now to notice the application of the steam-engine to a branch of manufacture of great national value, and one which for several years greatly added to the renown of Soho; we refer to the process of coining. The idea seems first to have occurred to Boulton, in consequence of the ease with which base money was produced, and the enormous extent to

which the traffic was carried on. "In 1759, it was estimated that not less than half the copper coin in circulation was counterfeit." Birmingham was notorious for its numerous illicit mints, and although the most active measures were taken for their suppression—several convicted coiners having been hung in chains on the outskirts of the town, and others sentenced to various terms of imprisonment—the practice was too lucrative to be readily surrendered. Boulton proposed entirely to do away with the "so-called copper coinage in circulation," and "issue new coins, the intrinsic value and superior workmanship of which should be so palpable as effectually to suppress counterfeiting and its numerous evils." At an interview held on the subject with the king's ministers, the recommendation which he made was so favourably received, that—

"They authorised him to prepare and submit to them a model penny, halfpenny, and farthing. This he at once proceeded to do, and forwarded them to the Privy Council, accompanied by an elaborate report, setting forth the superiority of the new coins over those then issued from the Mint, demonstrating that their adoption would effectually prevent counterfeiting of base copper money, and offering to guarantee the execution of a contract for a new coinage, at 'not exceeding half the expense which the common copper coin hath always cost at his Majesty's Mint.'"—P. 392.

The Government appear to have been quite satisfied with the specimens supplied by the Soho manufacturer; but the authorities at the Mint interposed a determined and prolonged resistance to the proposed change, and Boulton feared that the heavy expenditure of time, skill, and money, which his coining presses had cost him, would be pretty nearly thrown away. For ten years from this time the "lumbering machinery" at the Mint dragged on, executing a coinage inferior both in quality and in artistic style to the samples exhibited by Boulton, when at last common sense triumphed. In the year 1797 the order for a copper coinage arrived at Soho; and from that year until 1806, about four thousand two hundred tons of copper had been coined into twopenny, penny, halfpenny, and farthing pieces. The prejudices and jealousies of the officials at the Royal Mint passed away, and Boulton was actually employed to erect a new mint on Tower Hill, according to the arrangements which he himself had adopted; the machinery being constructed at his own manufactory.

During the long delay offered by "obstructive officialism"

the Soho presses were not altogether unemployed. A contract for upwards of a hundred tons of copper coin was executed for the East India Company, together with a copper coinage for the American Colonies, and a silver coinage for the Sierra Leone Company. Boulton at the same time turned his attention to the art of medalling; sparing, in accordance with his invariable custom, neither labour nor expense in obtaining correct models, and securing the most accurate and delicate finish in the engraving of the dies. Some of his specimens of medallie art were greatly admired; and though this branch of business does not seem to have been remunerative pecuniarily, "it increased the reputation of Soho, and reflected new credit upon the art manufacture of England."

In the year 1794, the eldest sons of Boulton and Watt became partners in the concern. Both were young men of high culture, every care having been bestowed upon their education; and the tastes which they indicated, as well as the training which they had received, well qualified them for the prominent part they were now to take in their fathers' business. Soon after their admission into the firm, we find them pretty actively employed in taking measures to protect the engine patent right, "the infringement of which had become general all over the country." This was the case especially in Cornwall. Legal proceedings were instituted, which, after extending over several years of sharply-contested trials, were decided in favour of the patentees, who recovered from various mining companies the sum of £30,000.

Watt was now in his fifty-eighth year, and Boulton eight years his senior. The active part which their two sons took in the business, and the capacity which they showed for carrying it on in a manner worthy of their fathers' fame, relieved the senior partners from many labours and anxieties which had been pressing heavily for many years. The days of monetary difficulty, too, had passed away; financial prosperity was setting in, and the remainder of life with both Boulton and Watt was a period of tranquil prosperity. Even on the expiration of the patent right in the year 1800, the business of the firm returned increasing profits; for the advantages which they possessed in superior machinery, skilled workmen and great experience, enabled them to turn out from Soho steam-engines of a better class than for a long time could be produced elsewhere.

Still, while relieved from many responsibilities and toils, and glad to avail themselves of intervals of recreation, to

which hitherto they had been strangers, it was not in the nature of either Boulton or Watt to find pleasure in prolonged seasons of relaxation and repose. Either pursuing some details of improvement, or engaged in some fresh scheme of invention, they must be at work. The department of business which chiefly engaged Boulton's attention during his later years was the coinage. In one of his letters he remarks, "Of all the mechanical subjects I ever entered upon, there is none in which I engaged with so much ardour as that of bringing to perfection the art of coining."

"His chief pleasure," observes Mr. Smiles, "consisted in seeing his new and beautiful pieces following each other in quick succession from the Soho Mint. Nor did he cease occupying himself with new inventions; for we find him as late as 1797, four years before his death, taking out a patent for raising water by impulse, somewhat after the manner of Montgolfier's hydraulic ram, to which he added many ingenious improvements."—P. 457.

In the year 1790, Watt removed from his residence in Birmingham to Heathfield, a pleasant suburb of the town; and here in a house built by himself, and surrounded with tastefully laid-out grounds, he spent the remainder of his life. His inventive faculty was as keen and as insatiable as ever; and he had a room in his own house fitted up with a turning-lathe, and all the tools necessary for mechanical exercises, and with blowpipes, retorts, and various instruments and articles used in chemical experiments.

One of his last inventions is thus described:—

"When in his seventy-fifth year, he was consulted by the Glasgow Waterworks Company as to the best mode of conveying water from a peninsula across the Clyde to the Company's engines at Dalmar-nock, a difficulty which appeared to them almost insurmountable; for it was necessary to fit the pipes through which the water passed, to the uneven and shifting bed of the river. Watt, on turning over the subject in his mind, shortly hit upon a plan which showed that his inventive powers were unimpaired by age. Taking the tail of the lobster for his model, he devised a tube of iron similarly articulated, of which he forwarded a drawing to the Waterworks Company; and, acting upon his recommendation, they had the tube forthwith executed and laid down with complete success. Watt declined to be paid for the essential service he had thus rendered to the Company; but the directors made handsome acknowledgment of it by presenting him with a piece of plate of the value of a hundred guineas, accompanied by the cordial expression of their thanks and esteem."—Pp. 497, 498.

The room which Watt occupied at Heathfield as a study and laboratory, was placed under lock and key at the time of his death, and everything within the apartment remains nearly the same as when the cunning artificer left it for the last time. "The piece of iron he was last employed in turning lies on the lathe; the ashes of the last fire are in the grate, and the last bit of coal is in the scuttle." A week or two ago we made inquiries about this room, if perchance we might obtain a sight of the interesting relics which it contains; but we found that no one was permitted to have access to it. Mr. Smiles, it seems, was favoured with admission, and he closes his work with a description of what he saw. We were informed that the room was also opened at the time of the last meeting in Birmingham of the British Association for the Advancement of Science; but it is very seldom that its quiet has been invaded.

Besides the discoveries and inventions which we have referred to in our notice of this volume, there are various others which we have not space to mention. It contains also sketches of eminent men with whom Boulton and Watt were on terms of intimacy. We lay down with gratitude a work which bears every mark of painstaking investigation and accuracy, and supplies exceedingly comprehensive and clear information upon one of the most important branches of mechanical science.

ART. VII.—*Life and Correspondence of Richard Whately, D.D. late Archbishop of Dublin.* By E. JANE WHATELY. In Two Vols. Longmans. 1866.

THERE is very little of these two goodly volumes which we could spare. There are a good many things which might, with advantage, have been added; some things, we think, bulky as the memoir would have been, which ought to have been added. As they now appear, these volumes give us very little more than a large, judicious, and eminently valuable selection from the correspondence of Archbishop Whately. The thread of his life is not shown, and can only be imperfectly traced through his letters. Nor is any such outline of the political and ecclesiastical history of the times, especially of Ireland, afforded, as is necessary to understand the opinions and conduct of one of the most distinguished and active public men of our time, who held in Ireland for thirty years perhaps a more influential and a more exposed position than any other Protestant. We could better have spared a few of the reminiscences contained in these volumes than such elucidation as would have been afforded by an outline, partly biographical and partly historical, of the sort we have indicated. What we miss is just what Dr. Arnold's biographer has done for the memory and history of his illustrious friend. Dr. Stanley has shown that such an elucidatory outline may be very brief and yet quite sufficient. We think it a pity that Miss Whately has not done for her father the like of what, in so classical and popular a biography, has been done for her father's early friend. Sections of terse biographical and historical elucidation, and sections of letters of a correspondent date and period, arranged in alternate chapters, would have furnished what the reader needs, and would have produced a much clearer, more instructive, and more complete representation of the character and life of the strong and impressive Archbishop. As it is, the reader almost needs to have Mr. Fitzgerald's biography of Whately in his hand, in order really to understand Miss Whately's, and certainly must have some sketch of the parliamentary and ecclesiastical history of the last five-and-thirty years by his side, or he will miss much of the instruction of these volumes. Miss Whately has, in fact, done very little more than lay her father's correspondence in order before

her readers. Nothing can be in better taste than what she does say. Our complaint is only that she has written so little. Mr. Hermann Merivale has, indeed, endeavoured, here and there, to supply her deficiencies by the insertion of illustrative summaries and passages, but his contributions are few, and, on the whole, not of great importance. It is as if he had not accomplished all that he intended, as if he had but touched, and made a beginning here and there, where complete and systematic work, in the way of editing and supplementing, was needed.

Our purpose in the present article is not by any means to attempt a critical estimate of the late Archbishop as a theologian, or in any respect specifically as an author. We know no one whose writings it would be a more onerous task to review, precisely because, almost throughout, there would be so much in them to signalise with admiration, and yet so much also to be assented to only with important qualifications, or from which it would be necessary to record—perhaps, also, argumentatively to sustain—our emphatic dissent. Adequately to review Whately's theories and opinions, would be to write a sort of encyclopædia, to discuss most of the leading questions of practical theology, of moral science, and of political and social economy. No one article could do justice to the theme; for England has perhaps never known a more independent, vigorous, fertile writer than Dr. Whately, or one in whom wisdom (for, on many points, he was eminently wise) stood so strikingly apart from reverence for antiquity, or in whom great originality of thought on many and very various subjects was less tempered by conversance with the learning of the schools. No man cared less for mere lore, as such. No man of learning ever studied less the history of opinions. The consensus of the learned, the weight of authority, were of small account with him. The only human master for whom he seems to have had any real reverence was Aristotle. One only absolute authority he recognised—that of Scripture; and, as to the interpretation of this, he paid little regard to the decrees of councils, or to the traditions of exegesis. Here, indeed, was his great and characteristic defect. Possibly, if he had given due heed to the thoughts of others, and applied himself with sufficient modesty and earnestness to understand the reasons for the judgments of the wise, or for the instinctive consents of the commonalty of thinkers, he might have been saved from some errors; he might possibly never have incurred the suspicion of Sabellianism; might never have adopted, or, having

adopted in early manhood, might—like Robert Hall—in later life have abandoned, and, early or late, might have been prevented from publishing his uncomfortable and unscriptural—let us say, also, his unphilosophical—views respecting the intermediate state; and, as regards the Sabbath and the obligation of the law, might have been kept from committing himself to superficial and dangerous opinions. But, in truth, whilst he loved to think for himself, and found in the quick soil of his fresh and vigorous mind interesting and far-reaching ideas continually springing up, on the least hint presented in reading or observation, he, for this very reason, read the less, and listened the less patiently to the thoughts of others. His was a generative rather than a receptive mind. He could not endure common-places; he had not patience to wash and sift gravel-pits for gold-dust; his induction was not sufficiently searching, minute, or continuous. To unfold his own ideas was his great delight; about these he talked to others; and he was ever intent on inculcating them upon his friends. When a boy, mathematics and day-dreams divided between them the monopoly of his time and thoughts. So, afterwards, hard facts, of nature or of social life, short and keen logic, and the elaboration of his own thoughts, theories, and plans, occupied his time and powers. For subtle speculations, or for learned research, he had no taste; he found too much to do in his own peculiar way, and too much delight in doing it, to care much about accumulating the knowledge of other men's thoughts. "Of all persons in modern times entitled to the name of philosophers," says Mr. Mill, "the two probably whose reading on their own subjects was the scantiest, in proportion to their intellectual capacity, were Dr. Thomas Brown and Archbishop Whately. . . . It cannot be denied that both would have thought and written better than they did if they had been better read in the writings of previous thinkers." At the same time, Mr. Mill assigns to both Whately and Brown a very high position as thinkers, because of the effect of their writings "in the origination and diffusion of important thought;" and gives as the reason that, "though indolent readers, they were both of them active and fertile thinkers."

Mr. Rogers, indeed, in his *Essay on Leibnitz*, justly remarks that the cases are very rare in which great "activity in the accumulation of knowledge" and great "powers of original speculation" are united. Leibnitz was one of these rare instances; but Whately was not, any more than Locke. Both were eminently English, eminently original and sagacious;

neither of them was a man of much reading. "Books" were to Whately "merely aids to thought; tools to work with, and nothing more." His "excogitative faculties" were so continually in play, "as to leave comparatively little time or inclination for the accumulation of miscellaneous knowledge."^a

When a thinker of this sort addicts himself to practical subjects; when he deals almost entirely with applied science, whether theological, moral, economical, or natural; when he occupies a central and conspicuous position, laying open to him a very wide field of observation as to subjects of leading importance, political, moral, and ecclesiastical; when he has a passion for teaching, is by nature a propagandist; when he is master of a lucid, engaging, and vigorous style, moulded by academic discipline and culture, and by long study and elaboration, into an admirable instrument of illustration and demonstration; when his eminent official dignity is such as to compel him often to publish his thoughts, and not seldom to expound and defend his special views; and when he enjoys during nearly forty years of full maturity and of conspicuous eminence, an almost unbroken course of physical health and vigour, it could hardly be otherwise than that he should be a very various and voluminous writer. Such a writer Dr. Whately was. The list of his publications given at the end of these volumes is exceedingly numerous; and yet it is confessedly incomplete. Indeed, we are surprised to observe that it does not contain his series of *Easy Lessons on the Evidences of Christianity*, on *Political Economy*, *The British Constitution*, *Moral Science*, &c., although these were among the most laboured and most valuable of his writings, some of them having been translated into many languages; and although Miss Whately in the life, as well as the Archbishop in his letters, is very frequently referring to them, to their success, and to the pains bestowed on their composition. Of course we cannot, as we have

* "From the beginning," says Mr. Herman Merivale, "and emphatically, Whately was a thinker. His favourite authors were few—Aristotle, Thucydides, Bacon, Bishop Butler, Warburton, Adam Smith; these were perhaps his principal intimates among great writers, and it will be easily seen that they are among the most 'suggestive;' among those who could furnish the most ready texts on which his ruminating power might be expended. But one unavoidable result of this comparative want of reading, in one who thought and wrote so much, was, that he continually stumbled upon the thoughts of others, and reproduced them in perfect honesty as his own. This was one of his characteristics through life. It is singular to read one of his early critics commenting on his tendency 'to reproduce the commonplaces of other writers, not unfrequently, without any apparent consciousness of their ever having seen the light before.'"—Vol. i. p. 10.

* *British Critic*, 1828, on his "Difficulties of St. Paul."

already said, criticise in detail such a writer in this article, which has for its text his life and correspondence. The man, and not his writings, is to be our subject ; Dr. Whately himself, as he was among men, at college, in society, before the public, as a friend, as a church-ruler, as a politician, and finally, as, with whatever defects, a humble Christian man.

His portrait has never been more strikingly or perfectly hit off than by Guizot, in his *Memoirs of His Own Time*. Miss Whately quotes the original passage, which we shall try to translate, although it is impossible adequately to render so vivid a piece of French description.

" Among the Anglican prelates with whom I made acquaintance, the Archbishop of Dublin, Monsieur Whately, a correspondent of our Institute, interested and surprised me; original, fresh, and fertile, startling, well-informed and ingenious rather than profound in philosophical and social science; the best of men, perfectly disinterested, tolerant, liberal, popular; amidst his indefatigable activity and inexhaustible conversation, strangely absent, familiar, abrupt, uncounted; amiable and engaging, whatever rudeness he may commit and whatever propriety he may forget. He was to speak on the 13th of April, in the House of Lords, against the Archbishop of Canterbury and the Bishop of Exeter, on the question of the Clergy Reserves in Canada; 'I am not sure,' said Lord Holland to me, 'that in his indiscreet sincerity he may not say that he knows no good reason why there should be a bench of Bishops in the House of Lords.' He did not speak, for the debate did not take place; but on this occasion, as on every other, he certainly would not have sacrificed to the interests of the corporation the least morsel of what he regarded "as the truth or the public good."—Vol. i. p. 454.

His remarkable absence of mind, about which so many extraordinary stories are current, was, of course, the result of his absolute concentration of attention on the subject which at the moment was occupying his thoughts, to the exclusion of all other matters whatsoever. The most general statement of this peculiarity would be, that he was utterly dead to all common-places. He has himself, in his *Common-Place Book*, described and lamented his own deficiency on this point.

"I have no relish," he says, "for ordinary chat; nor consequently for the company of a great part of the world, who have little to say that has anything but novelty to recommend it. It gives me no sort of pleasure to be told who is dead and who is married, and what wages my neighbour gives to his servants. I am ignorant of the streets and shops and neighbouring villages of the town where I live. I very often know a man without being able to tell any more about his

country, family, &c., than if he had dropt from the skies. Nor do I even know, unless I inquire and examine diligently, and with design, how far it is from such a place to another, what hour the coach starts, or what places it passes through. I am frequently forced to evade questions in a most awkward manner from not daring to own, nor indeed being able to convince any one of, my own incredible ignorance. If I had had no uncle nor aunt, I should probably have been ignorant of my mother's maiden name."—*Common-Place Book*, pp. 24, 25.

All which shows that Whately's mind was always deeply pre-occupied. The habit of absolute abstraction, doubtless, was formed in his boyhood. The two most absorbing mental occupations, in the case of the young, are mathematical calculation and castle-building. When a lad's mind is divided between the two, it is inevitable that a habit of mental abstraction and absence should be formed. Early introduction to general society, and continued intercourse with it, may serve to break the despotism of such a habit; a life of scholastic seclusion, only varied by the uncere- monious and polemically intellectual society of such a fellow-ship as that of Oriel College, where the trivial but beneficial amenities and humanities of common-place family and social intercourse were unknown, would be likely strongly to con- firm it.

We cannot be surprised to read, on the authority of his intimate friend, the Rev. Hercules Dickinson, who was also the son of perhaps the most intimate and valued friend and coadjutor Whately ever had—Bishop Dickinson—that a man of such character and manners often gave unintentional offence, by failing to notice his acquaintance; by entering a house or room abruptly, without salutation, breaking out into emphatic words on some subject which occupied him, and then leaving as abruptly and uncere- moniously; by "a start-ling brusquerie," which hurt the shy and affronted the proud. We should expect to find, as we do find, that "he was natural to a fault; and, in the careless familiarity of the college common-room, had acquired a habit of forgetfulness as to the smaller conventionalities of life."* Nor, if we duly reflect, shall we be surprised to be informed that such a man, so wrapped, not indeed, not at all, in himself, or his own interests, but in his own ideas, in the profound truths, real or supposed, or the benevolent schemes, which had taken absolute possession of him, should have no such amount of

time, thought, or feeling, to spare for the tastes, the feelings, the partialities or weaknesses, the special wants or special ideas of others, as to be easily able to enter sympathetically into communion with them. His sympathy with others was small, save with the few who were partners in his own ideas and his plans, or with whom he had been brought into affectionate relations of mutual knowledge and love. A man of energetic and practical mind, full of benevolent purposes, and confident in the soundness of his own principles and schemes of improvement or reformation, he exacted, at least he expected, for his work and aim's sake, all sympathy from others for his own ideas, and was only intimate with those who could thus sympathise, whilst he was unready to flow out in sympathy to others. He expected most around him to be his tributaries; he was unable to be theirs. But then his own ideas were always for the public good; his life and powers were wholly dedicated to unselfish objects; he had no leisure for the pleasant and softening fellowship and interplay of minor thoughts, and fancies, and feelings.

This want on the part of Whately was, no doubt, the secret of the lack of personal influence over others, of which he himself speaks as characteristic of himself; just as his ample endowment with the social sympathies which Whately lacked has been, in a great measure, the secret of the power wielded by that great master of influence, Newman, whose character, tastes, and opinions present, at so many points, so striking a contrast to those of Whately. Whately, in society, was destitute of those subtle and prehensile sensibilities, the *tentacula* of the spirit, by means of which the interest and affections of others are engaged and held fast. "I myself," he says, in his *Common-Place Book* (p. 369), "never had, in the strict sense of the word, any influence at all with any one. Whenever I have induced anyone to think or act in any way, it has always been by some *intelligible* process. . . . I may, perhaps, have convinced some persons who have been themselves influential; but I have never had any *direct* influence; that is, I have never produced any effect that could not be *clearly accounted for*."

Nevertheless, he could unbend with children. Their weakness and smallness, their touching simplicity and frankness, their utter dependence, moved and melted him:—

"My earliest recollections," says Mr. Dickinson, "of Archbishop Whately, go back to the year 1833" (Whately was then forty-six years old), "and the very first thing I remember of him left such an

impression of his kindness of heart as thirty years more of his acquaintance and friendship served only to deepen. He was standing on the steps of my father's house, in Baggot-street, just as I, with my brothers and sisters, came home from our afternoon walk. I can distinctly recall his voice, and his benevolent smile, as he cried out three or four times, 'I see little lambs,' 'I see little lambs,' and coming to the edge of the steps, gathered five or six of the younger ones into his arms, and then walked into the house with one of us upon his shoulder. All children naturally took to him, and seemed, with the quick and correct intuition of childhood, to understand and trust his love for them."—Vol. ii. p. 423.

When walking on St. Stephen's Green, he would send his dog to fetch and carry for the amusement of the children who congregated there, and some of whom learnt to salute him as "Artsbissop!" "In the Female Orphan House, and in the National Model Schools, which he used often to visit, he particularly endeared himself to the children."^a

In truth, the rough and uncouth dignitary was tender to helplessness, and both tender and most generous to real distress. He had no sympathy to spare for trivial feelings or interests. No kindly and gentle grace tempered his robust energy in the common intercourse of life; he knew nothing of child's-play, except with children; but, if once the fountain of his charity was struck by a case of real distress, it flowed forth, not in drops or rills, but in a great, deep river. Kept, as it was in his secret heart, sacred from all trivial occasions, its strength and freshness never wasted on merely conventional or sentimental appeals, Archbishop Whately's sympathy was a rich effusion of overflowing benevolence when an adequate cause had called it forth. When he lay a-dying, a clergyman from a remote part of Ireland came to see him. "The archbishop," he said, "educated my sons, and I would give anything to look at his face once more." To see him was all he wanted. The archbishop did not open his eyes, and was too ill to be spoken to. After standing a few minutes at the bedside, with tears running down his cheeks, the visitor left the house. It was then found that the archbishop's family had been ignorant of his generosity towards this poor clergyman. Nothing, in fact, can have been nobler than the archbishop's charities, nor anything more absolutely pure and disinterested than his conduct in money matters throughout his life. "The whole of the income derived from his see (with the exception of the ex-

^a Vol. ii. p. 423.

penses absolutely necessary to maintain his position) was entirely devoted to charitable objects, and the promotion of the welfare of the Church in his diocese. No man was ever freer from nepotism: his only son was never raised above the dignity of rector of a modest living in Dublin; and the provision he left for his family is little more than his private means would have admitted of his making."* From his see, his books, and his private property, he must have had a large revenue; but, having insured his life, he spent his income entirely, or almost entirely, and spent it in a noble, Christian way—worthy of a bishop among bishops.

Having had occasion to say so much as to the archbishop's unconsciousness, on many occasions, of all that appertained to the polished courtesies of life, it would be wrong if we did not add that, "he could, on occasion, comport himself with a dignity, and even courtly politeness, which sat gracefully enough upon him, though it was not his characteristic and ordinary bearing. At his own dinner-table he was always courteous, and particularly attentive as a host. No matter how earnestly engaged in conversation, he stood ready to receive his clergy, one by one, as they came in on his monthly dinner-days; and at the table never failed to take especial and friendly notice of the greatest stranger among his guests."†

No one who has been accustomed to notice character will be surprised to learn that Whately, being in his mature life such as we have now seen, was in his youth consciously awkward and painfully shy, in an extraordinary degree; and all the more because he was sensitive and proud. He was, even after he had become a Fellow of Oriel—Miss Whately informs us—"most painfully shy; and the well-meant efforts of his friends to correct this defect, by constantly reminding him of the impression he was likely to make on others, served to increase the evil they were intended to combat. In the pages of his *Common-Place Book* he records how at last he determined to make a bold effort, and care nothing for what others might be thinking of him, and, to use his own words, "if he must be a bear, to be at least as unconscious as a bear." And the effort succeeded. The shyness passed away, and, though his manners might have still a certain abruptness and peculiarity about them, the distressing consciousness, which made life a misery, was gone. That this was no trifling hindrance removed from his path, was attested by

* Vol. ii. pp. 440, 445.

† Vol. ii. p. 426.

his frequent emphatic remark in later years: "If there were no life but the present, the kindest thing that one could do for an intensely shy youth would be to shoot him through the head."*

"The effort succeeded." Yes; but the uncouthness of after years was itself the result conjointly of the original shyness and of the determination by which the shyness was cured—"if he must be a bear, to be as unconscious as a bear." He overcame his painful self-consciousness by a violent and resolute effort; but he never acquired true self-possession. At Oxford, indeed, Whately was known by the *sobriquet* of "the White Bear." He wore a rough white overcoat, and a white hat, and was always attended by a huge white dog, whose climbing performances, under his command, refreshed its master, and afforded vast amusement to the crowd. In those days of solemn and formal propriety, this was a somewhat broad and emphatic protest against the dominant conventionalism. It is plain that, taking his manners and appearance into account, this extraordinary college-don (for at this time he was Principal of St. Alban's Hall) deserved his nick-name. "He could be most touchingly gentle in his manner," says an old friend, "to those whom he liked; but I recollect a lady saying she would not for the world be his wife, from the way in which she had seen him put Mrs. Whately (the object all his life of his strongest affection) into a carriage."†

We are told, and can easily imagine, that, in childhood, he was not only shy and retiring, but timid; that he knew little of the high spirits and playfulness of early childhood; and that he shrank from the society of children of his own age. In all this the child was father of the man. Natural and nervous timidity, however, was in his case—as, indeed, it often is—united with a high degree of moral courage and resolution; while the extraordinary physical health and energy which, as he grew up, succeeded to the feebleness of his earlier childhood, afforded him a basis of vigour from which to obtain the mastery, for all great matters and occasions, of his original nervous tremors. In this case, however, as in the instance we have just before noted, we may trace in his after life the combined result of his original infirmity and of the resolution by which he mastered it. His public appearances showed the result in this instance, as his social habits did in the other. It is well known that nothing could

* Vol. i. pp. 11, 12.

† Vol. i. p. 12.

be more extraordinary or more uncouth than his gestures, attitudes, gyrations, and gymnastic feats, of which he was himself entirely unconscious, when speaking or preaching under strong pre-occupation or excitement. The explanation of this is implied in a passage of the Memoir. "It might be supposed," says Miss Whately, "from the natural shyness of his disposition, that, on first appearing in the pulpit, he would have been painfully conscious; but the deep and solemn sense of the message he had to deliver was an effectual safeguard against this tendency. On a friend asking him, if he did not feel very nervous on first reading and preaching in public, he replied that he *dared* not; to think of himself at such a time was, in his eyes, not only a *weakness*, but a *sin*."* In this case, as in the former, he could, happily for himself, banish all thought of himself; could suppress articulate self-consciousness; but he could not attain to self-possession. The gauge of the force which he put upon himself to overcome his natural timidity and embarrassing self-consciousness is to be found in the uncouthness and violence of the gestures and movements which resulted from his suppressed nervous susceptibility.

"To myself," says the Archbishop, in a letter to one of his most valued correspondents, Mrs. Hill, dated September 29, 1853, "the 'scandalon' most to be guarded against—the right hand and right eye, that offended, and was to be cut off—was one, which few people who have not known me as a child, would, I believe, conjecture. It was not avarice or ambition. If I could have had an Archbishopric for asking it of a minister, I would not have asked, though the alternative had been to break stones on the road; nor would such a sacrifice have cost me much of a struggle. But my danger was from the dread of censure. Few would conjecture this, from seeing how I have braved it all my life, and how I have perpetually been in hot water. But so it was. . . .

"So I set myself resolutely to *act* as if I cared nothing for either the sweet or the bitter, and in time I got hardened. And this will always be the case, through God's help, if we will but persevere, and persevere from a right motive. One gets hardened, as the Canadians do to walking in snow-shoes [raquets]: at first a man is almost crippled with the 'mal raquet,' the pain and swelling of the feet, but the prescription is, to go on walking with them, as if you felt nothing at all, and in a few days you will feel nothing."—Vol. ii. pp. 295, 296.

Although a man of most acute and able, and a pre-eminently analytic, mind, Whately was not, as we have intimated, and as Guizot soon discovered, a thorough

* Vol. i. p. 20.

scholar or a man of exact science in any one department. He was, doubtless, a good classic, with a keen appreciation of the niceties of the classical languages, so far as he was at the pains to study them. His discipline at Oxford secured so much for him. But he was not a first-class man, and we have Miss Whately's word for it that he was never regarded by the classical authorities of Oxford as "an accomplished" scholar.* In a word, he read the classical authors for their ideas, not for the sake of philosophical criticism or science. And, having no taste for verbal dialectics, or metaphysical subtleties, he would not be at the pains to hunt even for their ideas, not even for those of Plato, through long wastes of perplexing word-play. Nevertheless, he made good use of what he did read and know, and seems to have been right in his opinion that he had learned more, that he knew more, and more truly, about some of the ancients than many who had read much more than himself. In a letter to Lady Osborne, he says—

"I have never read, nor do I know of, any work written by an Epicurean, except Lucretius. And as for all that has been written about them, and about the other philosophical sects, you may easily find people who have read three or four times as much as I have. But as most of the ancient philosophers were Tractites" (the allusion is to the *Oxford Tracts for the Times*), "having a 'double doctrine,' it would be rash to decide what they really thought. Perhaps I might say with Hobbes, 'If I had read as much as some men, I should be as ignorant as they.' Certain it is that I have met with persons who know by heart much more of Plato and Cicero than I do, who have not found out, first, that they really believed nothing at all of future rewards and punishments; secondly, that the immortality of the soul which they held was practically equivalent to annihilation."—Vol. ii. pp. 160, 161.

For mental science, strictly speaking, Whately seems to have had no taste whatever, and, of course, he knew nothing whatever about it. His early devotion was to arithmetical calculation; and, if moral and economical studies, of human interest and of immediate practical importance, had not intercepted and absorbed his attention, it is likely that he would have excelled in all studies connected with exact science and natural philosophy. He was, in fact, for an amateur student, no mean adept in botany, and several branches of natural history. But from all speculative philosophy, and especially from metaphysics, he held absolutely

* Vol. i. p. 18.

aloof. Our own surmise is that Whately very early came to the conclusion that mental science, except in its most rudimentary distinctions and definitions, was a field of thought in which the conclusions of common sense were the only ones worth holding to, or as to which any satisfaction could be felt; that metaphysical speculators were doomed, in their weary gropings, to "find no end in wandering mazes lost;" and that he himself, especially, if he had entered into metaphysical inquiries, would have been set hopelessly adrift, from his inability to accept any conclusions as probable for which slender and scanty evidence only could be adduced. In a word, we apprehend that certain misgivings as to his own tendency to scepticism led him to abstain from a region of cloudy and doubtful thought, which, so far as he could see, could afford him no practical conclusions or results. He resolutely avoided all inquiries which he judged to be beyond his reach. To Mrs. Hill, he says, in April, 1854, "Certainly we may reckon among the obstacles to the attainment of truth presumptuous speculations on what is beyond our reach. Instead of ploughing a fertile soil, a man breaks his tools in attempting to dig in a granite rock."*

In one place, indeed, he speaks of himself as a Nominalist, and his quasi-Sabellian doctrine, as to the Trinity, is thoroughly Nominalist in character. But that he had ever mastered, or even studied, the Realist and Nominalist controversy, is hardly to be supposed. Not a trace of any familiarity with such subjects do we note in these volumes. It is probable that he would never have gone so far as to class himself with the Nominalists, would hardly have been at the trouble of forming any sort of a judgment in regard to the respective merits of Realism and Nominalism, had not the study of logic brought him of necessity within view of it. Though a most acute and dexterous logician, however, logic with him was never more than an art, or, if in any sense a science, it was an empirical science. He never made an attempt, so far as can be perceived, to fathom or even to apprehend the philosophy which, as Professor Mansel has shown in his *Prolegomena Logica*, lies at the foundation of logic. He seems never to have appreciated the truth, a truth as well understood by Sir John Herschel and by Mr. Grove, as by Sir William Hamilton or Professor Mansel, that, without a searching metaphysical discipline, no branch of philosophy can be mastered; that metaphysical science is

the high central plateau, from which all the valleys of scientific observation and culture diverge, and in which all the growing streams of human thought have their source. Hence, with all his ability—and there have been few abler men—with all his sagacity and enlightenment, Whately was scarcely more than the wisest among empirics, the most well-informed and sagacious among sciolists. We are not disposed, as some might be, to reckon his addiction to animal magnetism as one of the evidences of this. We are not convinced that he went any farther, as to this matter, either in faith or practice, than an unprejudiced inquirer and experimenter was bound to go, on the strict principles of inductive science. Nor shall we press the instance of his thorough devotion to homœopathy, although, for our part, we do not understand how any scientific man, although he may often approve, more or less, of homœopathic treatment, and admit the benefit in many ways of homœopathic experiments and practice, can accept the homœopathic principles or theory. But we cannot refrain from saying that we have been greatly astonished and, in a sense, offended to find that the only “mental science” (*sit venia verbo*) with which the Archbishop seems to have been at all acquainted is that wretched materialistic hodge-podge “Phrenology.” If he has occasion to refer to special faculties, or tendencies, he can find no better language than that of the incoherent, illogical, contradictory, cerebral organology, which all men of true philosophical training, all the masters of science, all with any insight whatever into the symmetry and unity of the mind and its faculties, have, from the beginning, been agreed in rejecting; an hypothesis which is sufficiently refuted by its inherent absurdity and contradictions; which is, also, as Lord Jeffrey, in the *Edinburgh Review*, and Dr. Roget, in the *Encyclopædia Britannica*, to mention no other names, long ago showed, a thousand times contradicted and refuted by fact; which, moreover, if it were ever so true, has this special characteristic, that, except by anatomical demonstrations after death, combined with an exact analysis of conduct, motives, and character, during life, it could not even be made to appear probable, on any true principles of inductive science, and even then could never be proved in such a way as to establish the hypothesis as a branch of science.* To us, we say, it has been a matter of surprise

* The inequalities, the convexities and concavities, in the bony surface of the skull, do not correspond with the moulding of the brain on its upper surface. Indeed the inside and outside of the skull or “brain-pan” by no means correspond with each other. The skull, in fact, is of very unequal thickness in different parts.

and of vexation to see Archbishop Whately lower himself beneath the level of all enlightened philosophy, by using, as his own familiar phraseology, on subjects connected with human faculties and motives, the jargon of phrenological charlatanry.

"I don't know," he says, for instance, in a letter to Mrs. Hill (Jan. 2, 1855), "whether you ever heard my remark that the *organ of conscientiousness* is the only one that *never* in its exercise *affords any direct gratification*. The *organ of love of approbation* gives much pleasure when we are praised, as well as pain when we are blamed or unnoticed; the *organ of secretiveness* makes those in whom it is strong *feel a delight in mystifying*. That of *number*, as I well recollect when I had it strong, about sixty years ago, *affords great pleasure* in the mere act of calculating; and so of the rest. But conscientiousness which gives great pain to one in whom it is strong, if he at all goes against it, affords no direct pleasure when complied with. . . .

"But a *benevolent man* is *gratified in doing good*; and because well-directed benevolence is a virtue, he is apt to fancy this is a delight in virtue as such. But it is the *organ of benevolence* that is *gratified*. And if he stands firm against solicitations and threats in a good cause, it is the *organ of firmness* that *affords the pleasure*; and so of the rest. Especially to a *pious Christian* there is always an indirect gratification in doing his duty, *through the organ of veneration*; for this, where it is strong, affords directly a *high degree of gratification*."—Vol. ii. pp. 327-8.

Here is mental and moral philosophy, with a witness! The Oxford doctor and magnate talks like an itinerant phrenological lecturer, who feels heads for a living. Here is divinity dealt out by an archbishop to a female admirer and disciple! Here are the Nominalist logician's "doctrines of grace." No wonder that such a divine was neither Arminian nor Calvinist. It is pitiful and grievous indeed to see the human soul and its faculties hashed and set out in such a style; to see the most noble and beautiful things, the most tender and holy things, things human and divine, thus degraded by such a man as Archbishop Whately. Verily, after this, we cannot wonder that Sir William Hamilton, the profound scholar and investigator, the devotee of high mental science, the champion, with whatever inconsistencies and imperfections, of a noble realistic faith in mind and morals, in things human and divine,

Hence it is utterly impossible, from the outward configuration of the skull, to infer anything as to the development, at any given point, of the brain within. Let us add here that the distribution of the brain into any such specific organs as phrenology assumes is absolutely belied by the appearance and anatomy of the brain itself.

should have found himself unable to appraise at a high value the logician of Oxford or the prelate of Dublin.

If we had to sum up in the fewest words all that was positive in the tastes and attainments of the Archbishop, we should say that he was interested in whatever seemed to bear on human advancement and in all that belonged to nature. Life, in a word, was what he cared for and lived for, life especially in the present and in the future. The Archbishop, with all his rugged individuality—and, with the exception of Carlyle, he was perhaps the most individual man of his age—was pre-eminently a philanthropist. Scarcely another could so truly have adopted as his own motto the well-worn line of Terence, "*Homo sum; nihil humani a me alienum puto.*" He had no æsthetic taste whatever; Ruskin was nothing to him. He cared nothing whatever for mere antiquarian lore.* He loved Shakspeare and wrote about him; Shakspeare is the poet of humanity. He loved Crabbe. And the fire and life of Scott's poems, which delighted him in his youth, retained their charm for him through life. "But," we are told by his daughter, "he had little toleration for the modern school of poetry. He was impatient of Wordsworth, and Byron he admired without taking pleasure in him."†

It might have been expected that he would at least have been versed in history, if in any branch of scholarly and statesmanlike culture. Yet, as to history, his daughter leaves us to infer that his knowledge was inexact, and that his study of it had been quite unsystematic.

"His knowledge of history was more varied and extensive than critically accurate. His memory for facts (of history) was retentive, whenever those facts could be brought to illustrate principles; otherwise, as mere facts, he cared little for them.

"Of chronology and geography, he would say, 'As they are called the *two eyes* of history, my history is stone blind.' This must be

* "For the treasures of art, antiquity, curious old cities, and fine buildings, he had little or no taste. Pictures gave him the liveliest pleasure, if the subject interested him, and the designs seemed well carried out; but not otherwise. He never forgot a picture which really illustrated a subject he thought interesting and suitable; sketches of costumes of different countries, illustrations of savage life, of hunting, or of striking scenes in history or fiction, delighted him. When on the Continent, many years later, he turned with indifference and almost distaste from the masterpieces of Raphael, Correggio, and other old masters. Madonnas and Holy Families seemed to him only misrepresentations of Scripture, whose beauty of execution could not atone for the false ideas conveyed; but he was enchained by a picture he saw at Frankfort, in 1846, of John Huss before the Council of Trent, and recurred to it repeatedly in after years. Architecture was a 'dead letter' to him; and for antiquities, as such, he had little or no taste."—Vol. I., p. 29.

† Vol. II. pp. 442, 443.

taken with some reservation. It is true he was not generally ready in remembering names and dates; but anything which threw light on the history of mankind generally, or on any important principle, moral, political, or social, was eagerly seized and carefully retained in his memory. He took great interest in military affairs; and entered even into the minute details of such changes in the art of war as might react on national history: even the description of war-like weapons and arms had a charm for him; and some of the female members of his family long remembered the disappointment they felt, when at a breakfast at his friend Mr. Senior's, at which he and Lord Macaulay and Sir James Stephen were to meet, instead of the 'feast of reason and flow of soul' they had looked forward to, in the meeting of four such remarkable persons, the conversation ran during the whole time on the history of improvements in the implements of war, which, to the ladies of the party, could have little interest.

"The curious inventions of savages had a peculiar interest for him, and the pleasure he took in trying experiments with the Australian boomerang, the throwing stick, &c., is remembered by all his friends.

"All that concerned the history of civilisation interested and occupied him; and especially all that could throw light on his favourite axiom that man could never have civilised himself."—Vol. ii. pp. 442, 443.

Although he edited Archbishop King's treatise on Predestination, he had paid very little attention to systematic theology, and seems to have known scarcely anything of the great divines even of his own Church; and, although his acuteness enabled him to make good use of such exegetical knowledge as he possessed, his attainments in biblical criticism appear to have been quite elementary.

And yet, owing to his excellent practical sense, his knowledge of life and human nature, and his keen and practised logical acumen, this man of superficial attainments has left behind him works of great value. His *Kingdom of Christ Delineated*, his *Essays on the Errors of Romanism*, and *On Some of the Peculiarities of the Christian Religion*, are able and very suggestive works. His *Easy Lessons on the Evidences of Christianity*, plain and perspicuous and unpretending as they are, are invaluable, and have been translated into thirteen languages. His *Historic Doubts relative to Napoleon Bonaparte* was of itself enough to make a reputation for any man. Of his theological works in general, so competent a judge as Mr. Rogers has pronounced that, "to great powers of argument and illustration, and delightful transparency of diction and style, he adds a higher quality still—and a very rare quality it is—an evident and intense honesty of purpose,

an absorbing desire to arrive at the *exact truth*, and to state it with perfect fairness and with the just limitations."

To us it appears that, if Archbishop Whately had really devoted himself to Ecclesiastical History, he could not have failed to enrich our literature with a work of rare value. But "*non omnia possumus omnes.*" Whately was a practical man, a Church ruler, a law reformer, an ecclesiastical reformer. Had he been a much more learned man, he must have been a less active and practical man. Possibly the world might have been the loser by the exchange.

We must not close our estimate of Whately as a student and thinker without referring to the one subject of which he may be said to have been something like a master. He thoroughly understood the principles of Political Economy, having found in the subject a most congenial study, and in Adam Smith a most congenial master. His *Introductory Lectures* on this subject, delivered at Oxford during his Professorship, were translated into French. He founded the Professorship of Political Economy at Dublin; and published an elementary book entitled, *Lessons on Money Matters*.

His *Elements of Logic* is a masterly book. In it, however, as we have intimated, logic is dealt with as a method or art. The processes of argumentative analysis and inference are unfolded. But no depths of thought are sounded. It is not a book belonging to the same category with either the famous work of Mill, or the lectures of Sir William Hamilton.

Our sketch of the Archbishop would be very defective, if we did not lay emphatic stress on his honesty. His integrity was supreme. With resolute loftiness of purpose he held aloof, all his life through, from all parties political or ecclesiastical. He never courted the favour either of a clique, or of a mob, of an order, or of a man. No considerations of personal advancement or profit seem ever to have swayed him for a moment. To the names of Cincinnatus and Aristides that of Whately may be added as a proverb of uprightness and pure integrity.

Having endeavoured, in the foregoing pages, to set forth to view the massive and commanding character of the Archbishop—to which we may note in passing, his great and stalwart bodily frame aptly corresponded,—without either concealing his obvious defects and blemishes, or underrating his great powers and rare excellencies, we may now with advantage proceed to give, from the volumes before us, some outline of Dr. Whately's life and history.

Among the ancestors of Archbishop Whately, on the father's side, was an eminent Puritan minister, Whately of Banbury, well reputed as a "painful preacher," and author of a still extant treatise on the *New Birth*. The Archbishop's paternal grandfather married a lady of the name of Thompson, belonging to the family of which Sir John Thompson, created Baron Haversham in 1696, was the head. One of his father's brothers (Thomas) was private secretary to George Grenville, the statesman, and published an *Essay on Market Gardening* (1770), and also *Remarks on Some of the Characters in Shakespeare*, which his nephew, the Archbishop, thought worthy of being re-edited and republished by himself. The Archbishop's father, Dr. Joseph Whately, of Nonsuch Park, was Prebendary of Bristol, Vicar of Widford, and Lecturer at Gresham College. He married Miss Jane Plumer, daughter of W. Plumer, Esq., of Gilston, and also of Blakesware Park, Herts, an ancient dower-house, where Mrs. Plumer resided in her widowhood, with her three daughters, and of which there is some notice in Charles Lamb's *Essays*. Dr. Joseph and Mrs. Whately had nine children; four of them sons. All nine lived to maturity, and most of them to old age.

Richard, the youngest child by six years, was born on the 1st of February, 1787, in Cavendish-square, at the house of his uncle, Mr. Plumer, then M.P. for Hertfordshire. He was a feeble and ailing infant, although he grew up to be a tall, powerful, well-proportioned man. "The earliest event of his life was his being weighed against a turkey, to the advantage of the bird." In childhood he hardly knew what appetite meant; "the sensation of hunger was to him something new and strange, when he first felt it as a boy of eleven or twelve."

His feeble childhood, no doubt, contributed to render him shy, timid, and quiet in his early years. The fact, also, that his brothers were too much older than himself for him to have any fellowship with them; that he was brought up, till he went to a boarding-school, almost entirely in the company of his mother and sisters; and that, being so feeble and sensitive, and the youngest of all, he was continually receiving, and therefore expecting, from all the family-world around him, sympathy and attention, will go far to account for those peculiarities of his disposition, in regard to the exaction of sympathy from others, such as he did not easily or ordinarily yield to others himself, which we have already had occasion to note.

As was to be expected in the case of such a child, he learnt to read and write very early, and read with avidity. It was

natural, too, that one of such a constitution and temper, and so brought up in a quiet rural home, should be thoughtful, dreamy, and fond of the garden and country. "His great delight was in the observation of nature. He would spend hours in the garden, watching the habits of spiders, taming young ducklings, and carrying them in his hand to pick snails from the cabbages, learning to distinguish the notes, of birds, &c. ; and to the results of these early observations he would often allude in after years." In all this, it is plain to see that "the child" was "father of the man."

"But his most remarkable early passion was for arithmetic. In this he displayed a singular precocity. At six years old he astonished his family by telling the celebrated Parkhurst, his father's near neighbour and intimate friend, and a man of past sixty, how many *minutes* he was old. His calculations were tested, and found to be perfectly correct." At this time, as he states in his *Common-Place Book*, he knew nothing of figures beyond numeration. He had no names for the processes he employed, and did his sums always in his head much quicker than any one could do them on paper, and always correctly. The sums were in the four elementary rules, and in the Rule of Three. "In this last point," he says, "I believed I surpassed the famous America nboy, though I did not, like him, understand the extraction of roots. I was engaged either in calculation or in castle-building, morning, noon, and night ; and was so absorbed as to run against people in the streets, with all the other accidents of absent people."

His powers could not, strange to say, be transferred to written figures. The passion for arithmetic wore off after a few years, and the faculty faded away. At school he was dull at figures, and never became a mathematician at college. "I was saved," he says, "from being a Jedediah Buxton, by the amputation, as it were, of the overgrown faculty. For, valuable as it is in itself, it would have been a heavy loss to have it swallow all the rest." The only remains of the lost faculty which his family were able to trace were, the remarkable readiness with which, in after life, he solved curious problems and arithmetical puzzles, and the singular clearness of his explanations of the *processes* of arithmetic.

His passion for "castle building," however, remained after his arithmetical faculty had vanished, and became more fully developed. "His were not the usual childish flights of fancy, but rather visionary speculations on abstract subjects ; fancied schemes for ameliorating the world, ideal republics, &c."

The absent boy was pitied by some, and flouted by others. He was thought odd and scarcely right. It was said that "he would never make his way in the world." Meantime, the child-philosopher, buried in his own thoughts, was busy with "conjectures and speculations, which have often found place in the writings of philosophers of maturer age. With regard to many theories of government, civilisation, &c., he was accustomed" in after life "to remark, 'I went through that when I was twelve; such a system I thought out when I was thirteen or fourteen,' and so on."

At the age of nine he was sent to Mr. Phillips' school, near Bristol, of which many old Kingswood scholars still living will have some remembrance. There he formed some friendships which lasted through life, especially with Mr. Rowe and Dr. Hinds. There, also, many of the boarders being West Indians, he obtained a familiarity with West Indian customs and habits, which he kept up and improved through life, and acquired an interest in the slavery question which grew with his increasing years and knowledge.

It is not surprising to learn that the school-life of such a boy, and one so nurtured as Richard Whately, was not, on the whole, a happy one. Shy, solitary, abstracted, his cravings for sympathy expiring in almost agony amid the rude shocks of school-boy tumult and violence; the butt of some, scarcely understood by any; Whately at school must have had much tribulation and little enjoyment. He spent his leisure most congenially, when he could have the privilege of solitary wanderings and observations, in natural history; or else, as we cannot but imagine, in pouring forth, in the spirit and strain of a philosophical chief to his admiring and docile disciples, his elaborate speculations in the ears of one or two half-awe-stricken juniors—such as Rowe and Hinds—who had gained some sense of his knowledge and powers.

At ten years, he lost his father—the one of his family best able to appreciate his character and powers. Mrs. Whately now removed to Bath, with her five daughters and Richard.

At eleven years of age, young Whately's physical powers began to develope. From this time he became robust. He grew up fond of fishing, shooting, walking, and, in general, of active open-air life, ruminating as he walked and wandered. He saw little, however, in his walks and excursions except that which he was bent on seeing. When he looked, he saw keenly; but, absorbed in thought, he often noticed nothing.

In his nineteenth year, that is, in 1805, he was entered at Oriel College, Oxford, then, and for many years afterwards,

the most distinguished of all the colleges. Dr. Copleston, afterwards Provost of Oriel—later still, Bishop of Llandaff—was at that time tutor at Oriel, and was the instrument of awakening the dormant energies, and of stimulating into high development the latent faculties, of Whately.

“To Richard Whately, whose intellectual life had hitherto been so entirely solitary, the lectures and converse of Dr. Copleston were like a new spring of life. For the first time he found himself brought into immediate communication with one who could enter into his aspirations, and draw out the latent powers of his mind. And under that new and genial influence the young student’s powers expanded like a plant in sunshine. Often has he described in after-life those lectures which were to form the turning-point in his intellectual career. As Copleston’s penetrating eye glanced round the lecture-room in search of an answering and understanding look, it rested with satisfaction on the one pupil who was always sure to be eagerly drinking in his every word. The Archbishop often dwelt on the thrill of pleasure with which he heard the first words of calm discriminating commendation of his theme from his tutor’s lips: ‘That is well, Mr. Whately; I see you understand it.’

“The influence which these two men reciprocally exercised on each other was very great, and to a certain extent coloured the subsequent lives of both. Bishop Copleston was more the man of the world of the two. But in him, under a polished and somewhat artificial scholarlike exterior, and an appearance of even overstrained caution, there lurked not only much energy of mind and precision of judgment, but a strong tendency to liberalism in Church and State, and superiority to ordinary fears and prejudices. It was in this direction that he especially trained Whately’s character; while he learnt to admire, if too staid to imitate, the uncompromising boldness and thorough freedom from partisanship of the younger man. But the ideas of both were too uncongenial with those which prevailed among the large majority of Oxford residents at the time to be in favour; and ‘Oriel’ in general, with its pretensions to dissect, by searching logic, the preconceived notions of the little world around it, was not popular. The great dispenser of patronage in those days, Lord Liverpool, was thought to have been prejudiced against Copleston by Oxford advisers. And Whately, whose disposition was always a little too ready to lend itself to impressions of injustice done to a friend, seems early in life to have regarded his tutor as something of a martyr.”—Vol. i. pp. 12, 13.

Between Whately and Copleston a full and affectionate correspondence was kept up through life, many interesting and valuable letters from the Archbishop to his episcopal friend being printed in these volumes; and, after the death of Copleston, Whately published a volume of his remains.

What was Whately's own estimate of his obligations to his college tutor and life-long friend will be best shown by the following letter, written forty years after his first introduction to him :—

" Dublin, July 7, 1845.

" My dear Lord,—I am bound to send, and you to receive, as a kind of lord of the soil, every production of my pen, as a token of acknowledgment that from you I have derived the main principles on which I have acted and speculated through life.

" Not that I have adopted anything from you, implicitly and on authority, but from conviction produced by the reasons you adduced. This, however, rather increases the obligation ; since you furnished me not only with the theorems but the demonstrations ; not only the fruits but the trees that bore them.

" It cannot, indeed, be proved that I should not have embraced the very same principles if I had never known you ; and, in like manner, no one can prove that the battle of Waterloo would not have been fought and won, if the Duke of Wellington had been killed the day before ; but still, the fact remains that the duke did actually gain that battle. And it is no less a fact that my principles actually were learnt from you.

" When it happens that we completely concur as to the application of any principle, it is so much the more agreeable ; but in all cases the law remains in force, that ' whatsoever a man soweth, that also shall he reap : ' and the credit or the discredit of having myself to reckon among your works, must in justice appertain to you.

" Believe me to be, at the end of forty years,

" Your grateful and affectionate friend and pupil,

" R. D. DUBLIN."

" It was in their long walks together," says Miss Whately, " in the woods and meadows near Oxford," that Whately and Copleston " discussed and worked out such subjects as form much of the groundwork of the ' Logic.' " * It must not be forgotten, however, that Copleston always maintained that he owed more to Whately than Whately to him. Whately was so absolutely intent upon abstract truth, and had so little thought or care, in comparison, about personal property in truths discovered or freshly applied, or about the fashion and peculiar minting of any statement of truth or principle, that, after once currency had been given to his own fresh thoughts, he often lost count or cognisance of them as his own. Sometimes, moreover, having once brought them strongly and clearly out himself, and secured for them a lodgment in other minds, he lost sight and memory of them altogether ; and,

when one of his friends, who had learned them originally from himself, long afterwards, perhaps, uttered or published them—with the advantage of finished statement and choice illustration—Whately would hail them with high admiration, as the fresh and original thoughts of his friend. Copleston was accustomed to say that many of his best ideas had thus been learnt from Whately, who himself, however, had entirely forgotten that they had ever passed through his mind, and gave Copleston full and exclusive credit for them. We suppose that all fertile and original thinkers thus unconsciously cast around them fruitful germs of thought; and thus find, and lose, and re-discover themselves, or by the ministry of their friends, not a few ideas worth registering and remembering. The same persons, however, will also, there can be no doubt, often unconsciously reproduce as their own, ideas which they have really derived from others. Such men have seldom accurate verbal memories, and very often have lost all trace of the track by which their own derived thoughts came to them. What seems to spring up spontaneously has often been unconsciously assimilated from foreign sources. Whately was scarcely less remarkable for giving out as his own special thoughts what had long been part of the common stock of ideas among cultivated thinkers, than for the prodigality with which he sowed broadcast in the minds of others ideas of his own, of which afterwards he quite forgot the paternity.*

He seems to have had a strong natural aversion, which remained with him through life, to exact and systematic study. In a letter, from which we shall presently have occasion to quote, he insists on and illustrates his own "natural laziness";† and his daughter speaks of his "constitutional indolence."‡ At college, however, he was stimulated to close and continuous work by the most honourable of motives; his anxious wish to achieve pecuniary independence, so that he might no longer be a burden to his widowed mother. His victory over his "constitutional indolence" was complete.

"Though naturally one who shook off sleep with difficulty, it was

* "No one can have failed," says his intimate friend, Bishop Hinds, "to remark in his writings, traces of that curious self-delusion which sometimes affects men of strong minds and strong affections, and who are by nature teachers rather than readers and listeners. Judgments and sentiments which he had himself instilled into his sectaries, when reproduced by them, struck him as novelties; and he may frequently be caught quoting, with much approbation, expressions of this or that follower, which in truth are mere 'Whatelians,' consciously or unconsciously borrowed from him."—Vol. i. pp. 27, 28.

† Vol. i. p. 66.

‡ Vol. i. p. 13.

his college habit to arouse himself by the help of an alarm in his room, at five o'clock, summer and winter, light his own fire, and study for two hours or more; then sally forth for an early walk, from which he returned in time to meet the band of late risers hurrying from their beds to the eight o'clock chapel. He has described, in his 'Annotations on Bacon,' the results of the observations of natural phenomena which he made in these early morning walks; and also his experience as a student with respect to hours. He found it best to pursue the early-rising plan when engaged only in the acquirement of knowledge; but whenever he had to compose a theme or essay, he found his ideas did not flow as freely in the morning as at night; he therefore changed his habits, and sat up at night while occupied in any original work."—Vol. i. p. 14.

Few men, indeed, have equalled Whately in closeness of application when he had a special object in view.

"When Whately was reading for the Oriel fellowship," says Bishop Hinda, "he spent a long vacation at Shanklin, in the Isle of Wight. It was before I became acquainted with him; but he has often told me that whilst there he made two days out of one. His method was to rise about three o'clock in the morning, and conclude his first day at noon. He then undressed, drew his bedroom curtains, went to bed, and slept for two or three hours. Then began his second day, which ended at ten at night. For all working purposes he found time doubled; the noon siesta doing for him what night usually does, in breaking the current of active life and preparing us for fresh exertion."—Vol. i. p. 23.

In 1809 Whately began to note his thoughts down in what he called a "Common-Place Book." It was characteristic of him that the title which most have given to a book of extracts from the writings of others, he gave to a repository of seed-thoughts of his own. At this time he was twenty-two years old. The hand, however, in which he began his entries is still youthful and unformed, while the style in which he expresses his virtuous and Christian aspirations is as stiff and laddish as the hand-writing.

"When I consider," he says, "the progress I have made in the improvement of my mind since I have been at college, I cannot help thinking that by perseverance almost any one may do more than at first sight appears possible; and I regret more than ever the time I formerly lost. But the past cannot be recalled; the future is in my power, and I resolve, through God's help, to make the best use of it; and though I am very likely to fail of my main object, I shall at least satisfy my conscience by doing my best. When I call to mind the independent spirit and thirst for improvement which I admired in my beloved tutor Cople-

ston, I am stimulated to double exertions, that I may be enabled, as in other things, so in this, to imitate his virtues; and as the improvement of my mind is one of my objects, though not the principal one, I have begun the plan recommended by Miss E. Smith, of keeping a register of my thoughts."—Vol. i. p. 15.

In the fly-leaf, also, of his first note-book is written out the last verse of Psalm xix. "Let the words of my mouth, and the meditations of my heart, be acceptable in Thy sight, O Lord, my strength, and my Redeemer."

Before this time, in 1808, he had taken his degree, a double second-class. Apparently it was about the year 1810 (the date ought to have been given) that he "gained the prize for the English Essay," the subject being the Comparative Excellence of the Ancients and Moderns. In 1811 he obtained the reward for which he had toiled so long and so honestly, a Fellowship at Oriel. He was now independent of all pecuniary help from his mother. In 1812 he "proceeded" M.A.

He had now for some time been engaged as private tutor at Oxford. It was in this capacity that he was introduced to one of his most valued and intimate friends, the late eminent and accomplished Mr. Senior.

"An old and valued friend of his, the late Mr. Hardcastle, requested him to undertake the tuition of a young man of great promise, who had come up to the University with every expectation of honours, but had failed to answer a question in his divinity examination in the very words of the Catechism. The examiner remarked, 'Why, sir, a child of ten years old could answer that!' 'So could I, sir,' replied the young student, 'when I was ten years old!' But the sharp repartee did not save him from being plucked. Both he and his family were naturally much mortified; but being of a nature not easily crushed, the disappointment, which might have been hurtful to many, acted rather as a stimulus on him; he resolved he would retrieve his injured reputation, and for this it was important to secure a first-rate private tutor. Through their common friend, Mr. Hardcastle, he was introduced to Mr. Whately, and shortly after wrote home to his father—'I have got Whately for my private tutor, and I will have the first-class next term.' He succeeded, and this was the commencement of a friendship between Richard Whately and Nassau William Senior which lasted through their lives. The younger friend survived his former tutor but a few months."—Vol. i. pp. 16, 17.

It was also as a private tutor that he renewed his acquaintance with his school-fellow Hinds, afterwards one of his chaplains, and through life his familiar friend and

correspondent. Bishop Hinds, though compelled years ago to retire from his see, still survives, has furnished to these volumes many valuable letters, and also some interesting reminiscences relating to this period, of which, however, we can but quote a little.

Bishop Hinds writes:—

“I went from school to Oxford in November, 1811; it having been previously arranged that Whately was to be my private tutor. He was, at that time, still a B.A. and in lodgings. There I received my first lecture. His apartment was a small one, and the little room in it much reduced by an enormous sofa, on which I found him stretched at length, with a pipe in his mouth, the atmosphere becoming denser and denser as he puffed. Not being accustomed to smoking, my eyes burned and my head was affected. All, however, was soon forgotten in the interest of the interview. There was no ostentatious display of talent and acquirement. Never did tutor in his teaching seem to think so little of himself, and to be so thoroughly engrossed with making his pupil comprehend what he taught. As was his custom, he often digressed from the lecture proper into some other topic, but was always instructive and entertaining. We immediately took to one another; I parted from him dazzled and fascinated.

“I was soon invited to join him in his early morning walks. His custom was to start soon after five o'clock, returning, generally, in time for eight-o'clock chapel. In these rambles he was glorious. Every object was a text. It may be literally recorded of him that ‘he spake of trees, from the cedar-tree that is in Lebanon even unto the hyssop that springeth out of the wall; also of beasts, and of fowl, and of creeping things, and of fishes; all taking their turn with classical or modern literature, religion, philosophy, and what not besides? *Nihil non tetigit, nihil tetigit quod non ornavit.*

“One peculiarity I used to note; he ever quitted the beaten tracks; and we were sure, sooner or later, to have a hedge or ditch to scramble through, or swampy ground to tread delicately over, without any apparent reason except his perverse propensity for *avis loca, nullius ante trita solo.*

“On one of these occasions we were joined by another of his pupils, a schoolfellow of mine, long since dead—an out-and-out specimen of Milsom-street and the Pump Room, Bath, as Bath was in those days; exquisitely neat in his person, and scrupulous about soiling the very soles of his boots—*shoes* I ought to say, for at that time they were generally worn in Oxford. We got on without any serious discomfot to him, until we came upon a stream of water. Whately turning to him said, ‘What shall we do now?’ He, no more dreaming of his tutor really fording the stream than of his miraculously drying it up, replied jocularly, ‘If you will go through, I will follow.’ In plunged Whately; but looking back, and seeing H. R. gaping at him, without the remotest intention of following

him, he returned, and exclaiming, 'You said you would follow me, and follow me you shall,' dragged him bodily through the water. He was a good-natured fellow, and joined in the hearty laugh at his expense, but never in another cross-country walk."—Vol. i. pp. 20—22.

In his vacation-rambles Whately, at this time, always carried a gun, and occasionally brought down a bird.

The clerical career of the future Archbishop began in 1814, when he was ordained deacon. He preached his first sermon at Knowle, in Warwickshire. He had, however, forgotten to write down his text, and, after he had entered the pulpit, had to communicate with the clerk to procure it.

Meantime, in the Oriel Common Room, his intellectual faculties found full and congenial exercise. In 1815 Arnold was added to a company of Fellows which previously included such men as Copleston, Denison, Whately, Keble, and Hawkins.

"That Common Room," says Bishop Hinds, "was to him not a mere place of resort for relaxation and recreation, but a school for sharpening his argumentative powers, and for training him to make that use of them in his social intercourse, in Parliament, and other public assemblies, which was so striking and effective."—P. 27.

"At Oxford," however, Bishop Hinds informs us, "Whately was never a popular man. His opinions clashed too decidedly with those which prevailed in the Oxford society of his day to render him so in general life; and, in private, many were deterred from attempting any close intimacy with him by his roughness of manner, and the disdain which he was commonly supposed to entertain for the common herd of thinkers. All the while, his attachment to his own particular set—to those few who were his real intimates—was almost feminine in its tenderness, and most constant in its durability. Any friend of Whately's was (in his view) something sacred—some one whose views, and writings, and character, were to be defended against all comers, and at all hazards."—P. 27.

In 1815 he accompanied two of his sisters to Oporto, the journey being rendered necessary by the state of health of one of them. He remained at Oporto only a few days, returning by the next packet to his college duties. During five or six years after this time he remained at Oxford, teaching with eminent success, his great power being, as his ancient college-friend, Newman, has expressed it, that of training his pupils "to see with their own eyes and to walk with their own feet." To the shy and timid, especially—no doubt, in part, from a strong fellow-feeling—he "acted

the part," again to quote from the *Apologia*, "of a gentle and encouraging instructor."

In 1821 he married. "Happiness," he had written in his *Common-Place Book*, the year before, "must, I conclude from conjecture, be a calm and serious feeling." The following year he adds a note in Latin, "I proved it, thank God! July 18, 1821."* This was the date of his marriage to Miss Pope, a lady who, throughout his life thereafter, was to him as a good angel at his side, "adorned with good works," and with the "meekness of wisdom." Dr. Whately, after his marriage, continued to take pupils at Oxford.

In 1822 Whately was appointed Bampton Lecturer. The subject which he chose was "The Use and Abuse of Party Feeling in Religion." A fourth edition of these Lectures was published in 1859.

As a preacher in the University, Whately's powers, at this time and until his removal to Dublin, some ten years later, were fully appreciated, although as might be anticipated, "his manner was far from attractive." "Early attendance at the doors of the church, on the days he preached, was necessary to secure even a standing-place."†

In August, 1822, he was presented by his uncle, Mr. Plumer, to the living of Halesworth, in Suffolk. Here he applied himself with characteristic honesty and earnestness of purpose to his parochial duties. The task was all the harder, because for many years the parish had been under the nominal charge of an altogether infirm and incompetent incumbent, so that "the people," to use Mrs. Whately's words, "were in a state of heathenish ignorance from long neglect." The new rector established an adult school, and a weekly lecture, which he gave at first in a private room, and then, when his hearers increased, in the church. He took great pains—being one of the leaders in reviving the practice—duly to prepare the young people of his parish for confirmation. Here it must unhappily be added, he preached, in his weekly lectures, the substance of the volume which he afterwards published under the title, *View of the Scripture Revelations concerning the Future State*.

He did not remain long, however, at Halesworth. Having taken his degree as D.D., in 1825, he was in the same year appointed, by Lord Grenville, Principal of Alban Hall. On this he removed with his family to Oxford, intending to spend the vacations at Halesworth. The damp climate, however, of

* P. 43.

† P. 39.

the Suffolk village had never agreed with the health of Mrs. Whately. Several times her life had been in danger, and her constitution had been seriously undermined. And, after two or three years' trial, it became evident that she could not, without the most serious risk, spend even the vacations at Halesworth. Dr. Whately, therefore, "gave up residence, and, placing a valued and trusted curate in the rectory, contented himself with solitary visits to the parish three or four times a year, passing the long vacations with his family either at the sea, or at Tunbridge Wells, in the neighbourhood of his wife's relations, to whom he was strongly attached."

Alban Hall had come to be a kind of "Botany Bay" to the University, a place to which students were sent who were considered by their friends too idle and dissipated to be received elsewhere, or who had been obliged to leave other colleges. Dr. Whately's strict and vigorous government, however, presently established the discipline and reputation of the Hall, which, after a while, he found himself obliged to enlarge. He was Principal from 1825 to 1831; for his first Vice-Principal he chose Mr. Newman, and for his second Dr. Hinds.

It does not appear at what time Whately began to write for the press. But it would seem to have been several years after he gained (in 1811) his Fellowship. His famous little pamphlet, entitled *Historic Doubts relative to Napoleon Bonaparte*, which, as an acute and ingenious piece of argumentative irony, directed against sceptical critics of Scripture, has richly deserved its celebrity, was published in 1819. There can be little doubt, however, that, before this period, Whately had begun to contribute to various periodicals. About this time, or soon afterwards, he wrote much for the *Encyclopædia Metropolitana*, in which work, indeed, his "Logic" and "Rhetoric" first appeared. In 1821 he edited Archbishop Wake's *Treatises on Predestination*; in 1825 he published his *Essays On some of the Peculiarities of the Christian Religion*; in 1828 those *On some of the Difficulties in the Writings of St. Paul*; in 1830 those *On the Errors of Romanism Traced to their Origin in Human Nature*; a series of essays which, while they established his reputation as an acute, practical, and Protestant theologian, "brought down on him," as Mr. Merivale says, "no small share of his unpopularity with some classes in the Church." The sacerdotalists could not now but recognise in Whately their most formidable antagonist. His works on logic and rhetoric first appeared as separate volumes in 1827 and 1826 respectively.

The period of Whately's second residence at the University, from 1825 to 1831, was perhaps that of its highest intellectual splendour. "Besides Copleston and Whately," Mr. Merivale reminds us, "the names of Newman, Pusey, Keble, Arnold, Hawkins, Hinds, Froude, Wilberforce, Blanco White, and others, appear in that brilliant assembly of gifted and eminent men. Most of these were on intimate terms with the principal of Alban Hall; several were among his closest friends." Of all these, perhaps, though it is much to say, the one most highly prized as a friend, and most beloved by Whately, was Arnold, between whose family and that of Whately, as well as between the heads of the families, there was kept up to the end the most full and affectionate intimacy. From Arnold's letters to Whately, a selection is published in *Arnold's Life*. Unfortunately, of Whately's many letters to Arnold, only one has been preserved.

During the period of which we are speaking, intellectual affinity as yet held in friendly combination those whom, after a while, ecclesiastical discordance was to divide into two antagonistic parties. The Hampden controversy was to be the test, by the introduction of which into the mingled elements of university life and fellowship, the two groups of eminent men who were to give character to those parties were to be finally separated from each other. On the one side was to be ranged Copleston and Whately, Arnold and Hinds—all of whom, however, had, at the time of the Hampden controversy, ceased to be University residents; on the other, Newman, Pusey, Keble, Froude, and Wilberforce. Hawkins alone was to be so fortunate, or unfortunate, as to hold throughout a sort of intermediate position.

It is curious to note not only that "much pleasant intercourse with Keble was" at this time "enjoyed at Oxford" by Dr. Whately; but that it was during a visit paid by Keble to Whately at Halesworth, that the MS. of the *Christian Year* was read by Keble to his host and hostess, and that they "were among the earliest friends who suggested its publication."* Certainly, it could never have been imagined beforehand that Whately, who could not endure Wordsworth, and had no liking for symbolism, could have much enjoyed the meditative beauty and ecclesiastical symbolism of the *Christian Year*, or that, save on the common ground of the garden and the country, there could have been much affinity of taste or tendency between the author of *Lyra Innocentium* and the author of the *Essays on Romanism*.

* Vol. i. p. 54.

And, in fact, the differences between Whately and such men as Keble, Froude, and Newman, were too real, too radical, and too momentous, to admit of profound sympathy or long-continued intimacy between them. It was in 1826 that the remarkable *Letters on the Church by an Episcopalian* were published. These were at once ascribed to Whately, were never disclaimed by him, and are allowed, without any suggestion of doubt or demur from his daughter, to be still attributed to him. In truth, from the manner in which Miss Whately refers to this question, it is evident that she intends her silence, as to the point of authorship, to be construed into assent, although she makes no affirmation on the subject.* Of this work, which advocated the entire mutual independency of Church and State, the Church, however, retaining its endowments, although not its parliamentary peerage, Froude said to Newman that "it would make his blood boil." It did not, indeed, excite in Newman the same feeling as in Froude; it did, on the other hand, contribute materially to the formation of Newman's own opinions on certain points of ecclesiastical principle; but at least it marked out the position held by its author in 1826, as to ecclesiastical questions, as very different indeed from that occupied by the party of Keble, Froude, and Newman.

Miss Whately quotes what, with evident kindly feeling, Newman has written in his *Apologia* about his own relations with Whately during their common residence at Oxford. It will be remembered that Newman owed very much indeed to Whately; who had taken him most kindly by the hand, had drawn him out, and, with characteristic energy, befriended and sustained him, and had made him his Vice-principal at Alban Hall. It will also be understood that, as Newman grew into a High Church and high Tory zealot, Whately and he could not but part company, until intimacy cooled into distant friendliness, not unqualified by mutual suspicion. There is evidence in these volumes that, until Newman, by the special course which he pursued as the chief censor and accuser of Hampden in 1836, had, in the view of Whately, set an impassable gulf between them, Whately retained towards his former *protégé* some warmth of friendly feeling. When Whately, then Archbishop of Dublin, was visiting Oxford in 1834, it was reported that Newman absented himself from chapel that he might not receive the Sacrament with the Archbishop. On hearing this report some months

afterwards, the Archbishop wrote to Newman to ask if it were true. The result was a denial of the report; coupled, however, with some criticism of the Archbishop's principles, and of his ecclesiastical policy in Ireland. To this letter of Newman's the Archbishop replied at some length. We shall quote somewhat more than the half—the latter half—of this letter, the last, it would appear, ever addressed to his old friend. The date is "October, 1834."

"Far be it from any follower of our Master to feel surprise or anger at any treatment of this kind; it is only an admonition to me to avoid treating others in a similar manner, and not to judge another's servant, at least without a fair hearing.

"You do me no more than justice in feeling confident that I shall give you credit both for 'honesty' and for a 'deeper feeling,' in freely laying your opinions before me; and besides this, you might also have been confident from your own long experience, that long since—whenever it was that you changed your judgment respecting me—if you had freely and calmly remonstrated with me on any point where you thought me going wrong, I should have listened to you with that readiness and candour and respect which, as you well know, I always showed in the times when 'we took sweet counsel together, and walked in the house of God as friends;' when we consulted together about so many practical measures, and about almost all the principal points in my publications.

"I happen to have before me a letter from you just eight years ago, in which, after saying that 'there are few things you wish more sincerely than to be known as a friend of mine,' and adding a much more flattering account of benefits derived from me than I can pretend to merit, you bear a testimony, which I certainly can most heartily agree in, as far at least as relates to the *freedom* of our intercourse and the readiness and respect with which you were listened to. Your words are: "Much as I owe to Oriel in the way of mental improvement, to none, as I think, do I owe so much as to yourself. I know who it was first gave me heart to look about me after my election, and taught me to think correctly, and—strange office for an instructor!—to rely upon myself. Nor can I forget that it has been at your kind suggestion that I have since been led to employ myself in the consideration of several subjects which I cannot doubt have been very beneficial to my mind."

"If in all this I was erroneous, if I have misled you or any one else into the 'pride of reason,' or any other kind of pride, or if I have entertained, or led others to entertain, any erroneous opinions, I can only say I am sincerely sorry for it. And I rejoice if I have been the means of contributing to form in any one that 'high religious temper and unclouded faith' of which I not only believe, with you, that they are able to withstand tendencies towards infidelity, but also that, *without them*, no correctness of abstract opinions is of much

value. But what I now mean to point out is, that there was plainly nothing to preclude you from offering friendly admonition when your views of my principles changed, with a full confidence of being at least patiently and kindly listened to.

"I, for my part, could not bring myself to find relief in avoiding the society of an old friend, with whom I had been accustomed to frank discussion, on account of my differing from him as to certain principles—whether through a change in *his* views or (much more) in *my own*—till, at least, I had made full trial of private remonstrance and free discussion. Even a man that is a heretic, we are told, even the ruler of a church is not to reject till after repeated admonitions.

"But though your regard for me falls so short of what mine would have been under similar circumstances, I will not, therefore, reject what remains of it. Let us pray for each other, that it may please God to enlighten whichever of us is in any point in error, and recall him to the truth; and that, at any rate, we may hold fast that charity without which all faith that can subsist apart from it (though enough to remove mountains), and all knowledge, will profit us nothing,"—Vol. i. pp. 238—40.

Many years after this, Newman became a co-resident with Whately in Dublin, during the time of his connection with the (so-called) Catholic University; but it does not seem that the old friends ever met. Whately's alienation from Newman had long been complete. The part he took against Hampden, and then his share in the *Tracts for the Times*, were far too much for Whately. His notions of honour and uprightness were outraged by Newman's conduct. He possessed no casuistry himself, by which he could construct an apology for them. Hence there can be no doubt that, as Newman tells us he has heard, Whately "has inserted some sharp things in his later works" about Newman. In these more highly-educated days, however, Newman's Tractarianism may fairly be regarded as rather a mild form of Anglican High Churchism. We wonder what Whately would have said if he had lived to see what we now see.

Whately's friendship with Pusey seems never to have quite died out. We have in these volumes a friendly correspondence of the date 1832, which originated in a published criticism of Dr. Pusey's upon some remarks contained in a charge of Archbishop Whately's, relating to the cholera and national judgments. Nine years later, the Archbishop and the pious heresiarch (for such emphatically was Dr. Pusey held to be by all orthodox Protestants in 1841) met at Brighton; and as this interview has been grossly misrepresented, both as to its time and circumstances, we may here give Miss Whately's correct version of it:—

"They met as old college associates, on the most friendly terms. Dr. Pusey, in the course of the interview, asked the Archbishop's permission to preach in his diocese. The Archbishop told him, candidly, he dreaded his introducing novelties. 'Not novelties,' replied the other. 'Well, if you will, antiquities,' said the Archbishop. Dr. Pusey requested him to name some examples of these 'antiquated novelties,' and he instanced the practice lately introduced of mixing water with wine at the communion. Dr. Pusey excused the practice by observing that at the early communion complaints had been made that the wine affected the heads of the communicants! The Archbishop exclaimed, 'Oh! Pusey, you cannot be serious;' and at last he added, in his own account of the conversation, 'I fairly made him laugh.'"—Vol. i. p. 486.

Although, however, Dr. Whately at Oxford kept up friendly relations with the High-Church leaders of the rising Oxford party, the schism which began to grow up from the time of the agitation respecting the Catholic claims, rendered his position in the University less agreeable than it had formerly been.

"Strong political excitement widened the breach of feeling which had always existed between him and the old 'high-and-dry' majority of the residents. And those younger and more far-reaching spirits, with whom his sympathies had chiefly lain—of whom Newman, in his then state of mind, may be taken as an instance—were now detached from him, not because they had joined the old school, but because they were forming to themselves a new school; which began in fierce disapprobation of the 'liberal' mode of dealing with the Church, and, after many vicissitudes of thought—from which Whately's unchangeable consistency was altogether alien—ended for the most part by abandoning that Church. Whately's adherents, beyond the limited circle of his attached friends, were now few, and shared his unpopularity."—Vol. i. p. 65.

It was during his residence at the University as Principal of Alban Hall, that Whately's reputation as a man of intellect and wit rose to its height. A few worthy specimens of his wit are given by Miss Whately. "It is no wonder," said he one day to a friend, "that some English people have a taste for persecution, since it is the first lesson that most are taught in their nurseries." His friend denied that he, at least, had so been taught. "Are you sure?" replied Whately. "What think you of this:—

"Old Daddy Longlegs won't say his prayers,
Take him by the left leg, and throw him down stairs."

Some admirable remarks on the subject of controversial writings, especially such as relate to the controversy with the

Church of Rome, are assigned by Miss Whately to the period between 1828 and 1830.

"If in any publication designed to be popular, and most especially in any question with the Church of Rome, I found that the author was provided with an ample store of the most decisive testimonies from the greatest Biblical critics, and other writers of great weight, sufficient to convince any reader of intelligence, candour, learning, and diligence, I should be inclined to advise him, if he consulted me, to strike it all out: if not, however decisive his victory in the eyes of competent judges, I should expect that—orally or in writing—he would be met by opponents who would join issue on that portion of his argument (keeping all the rest out of sight) which turned most on matters of deep research and multifarious reading; boldly maintaining that he had misrepresented this or that author's opinions, that he had omitted the most weighty authorities, and that, in such-and-such points, the voice of the learned world was against him, &c. Who of the unlearned could tell which was in the right?

"He might reply, and triumphantly disprove everything that had been urged against him; he would be met by fresh and fresh assertions and contradictions, and fresh appeals to authorities, real or imaginary; and so the contest might be kept up for ever. Meantime, the mass of the readers would be like a blind man who should be a bystander, though not a spectator, of a battle—incapable of judging which party was prevailing, except from the report of those who stand next him. Each man would judge of the matter in dispute on the authority of the teacher whom he had been accustomed to reverence, or who was the most plausible in manners, or the most vehement in asseveration. And, moreover, all the readers (of the class I am speaking of) would have it impressed on their minds continually more and more, as the controversy went on, that the unlearned have nothing for it but to rest in implicit acquiescence on the authority of the qualified to guide them; being as incapable of gaining access to, and reading and understanding, the voluminous works referred to, as of mastering the sciences of anatomy, pharmacy, &c.; so that they must proceed as they do in the case of their health—i.e. resort either to the family physician, or to anyone that they fancy, put themselves into his hands, and swallow what he prescribes, without any knowledge of the what or the why; only with this difference, that the errors of a doctor may be detected in *this* world, by his patient being cured, or the reverse; whereas the D.D., unlike the M.D., cannot be tried by experience till the day of judgment.

"This supposed necessity of relying *implicitly* on the *authority* of a spiritual guide, is not stated and proved, once for all, as a distinct proposition, but is made to sink, gradually, more and more into the mind, in the course of such a controversy, from the obvious impossibility, to the unlearned, of verifying for themselves the statements on which each argument is made to turn.

"And those who do not thence give themselves up to the authority of their respective leaders, are apt to infer that there are no means for the mass of mankind to ascertain religious truth, and that, consequently, there is no such thing; that as the religions of Brahma, Mahomet, and Christ, &c., all rest, as far as regards the people, on the same grounds—the assertions of the learned—and, as they cannot be all true, a man of sense will *conform* to that which suits his taste or convenience, and *believe* none.

"The issue of such a controversy, so conducted, in a popular work (supposing the intrinsic force of the argument to be completely on the Protestant side), I should expect to be—and, as far as my observation has gone, this expectation is confirmed—that the generality of the Romanists should be confirmed in their implicit reliance on an infallible church, and that for one convert they lost, they would gain two, besides several converts to infidelity.

"For these reasons, I should, as I have said, rather avoid appeals to rare or voluminous works, to elaborate disquisitions, and to disputed passages of Scripture."—Vol. i. pp. 57—60.

In 1829 Whately was elected Professor of Political Economy, in succession to his pupil Senior. We quote the following extract from a letter to a friend on his acceptance of this appointment, because of the light which, in more respects than one, it throws on the character of the writer. Let us note particularly, that the sentence which is printed in *italics* affords a sample of the statesmanlike sagacity for which he was so remarkable:—

"With respect to the Professorship of Political Economy, I have made up my mind to accept it if there is no rival candidate, which the Provost will undertake to ascertain. It is not, however, exactly from 'having a fancy for it' that I am induced to do so; for, though it is entertaining to me to read Senior's lectures, &c., and to converse on the subject with an intelligent companion, such is my natural laziness (which I believe you greatly underrate) that no taste for any subject ever yet did, or I believe ever will, bring me to set to *work* and systematically master it. In chemistry, in natural history, and several other pursuits, I am not without an interest; but it is only strong enough to pick up, in a lounging and desultory way, a little superficial smattering. Never did I *study* any subject—never did I, properly speaking, do any manner of *work*, except either from necessity or a sense of duty. In the present case there is, indeed, no precisely *definite* duty incumbent on *me*; but, if it is right that a thing should be done, it must be right that *somebody* should do it: and some of my friends have persuaded me that this is a sort of crisis for the science in this place, such, that the occupying of the office by one of my profession and station may rescue it permanently from disrepute. Religious truth—which is, as you observe, the only

description that calls for great sacrifices—appears to me intimately connected, at this time especially, with the subject in question. *For it seems to me that before long, political economists, of some sort or other, must govern the world ; I mean that it will be with legislators as it is with physicians, lawyers, &c.—no one will be trusted who is not supposed, at least, to have systematically studied the sciences connected with his profession. Now the anti-Christians are striving hard to have this science to themselves, and to interweave with it their own notions ; and, if these efforts are not met, the rising generation will be at the mercy of these men in one way or another—as their disciples, or as their inferiors. I am thinking, in the event of my appointment, of making a sort of continuation of Paley's *Natural Theology*, extending to the body-politic some such views as his respecting the natural.*—Vol. i. pp. 66, 67.

Having now found our way almost into the mid-stream of Whately's busy and influential life, the wealth of his correspondence becomes so abounding and so tempting, that, with the few pages left at our disposal, we know not how to make a selection for quotation. We could hardly escape censure, however—at least from our clerical friends—if we failed to print the following passages of a letter to his curate at Halesworth, dated in August in 1829 :—

"I am sorry you should take me for such an arrogant coxcomb as to 'enter the desk and deliver a lecture without any previous preparation.' I never was guilty of that, though the preparation was not always (as it was in general) made just before the lecture was given. I could think over what I had to say—sometimes two or three days before—and that often, while I was digging or out shooting ; different people have different ways of studying, but no one can do his best without study. And pray do not suppose that I was induced to give those lectures from a persuasion that I possessed some uncommon gift denied to others. If I had been in that mind, I should have thought most of displaying eloquence, and perhaps I might have succeeded in gaining more admiration ; but I should have done little or no good. A Christian minister has something better to think of than his own powers and his own credit. If another man is at hand, and the question is whether he or I shall deliver a discourse on some particular occasion, it is then time enough to consider which of us will do it the better ; but, when I am left to myself, I have only to consider whether or not my instruction will be better (not than somebody's else might have been, but) than none. It is the ruin of our Church that her ministers are too careful of their own credit, and too much afraid of affording 'triumph to the Dissenters,' by making an attempt and failing, while we forget that it is a standing matter of triumph—and, in some degree, of just triumph—to them, that we are dumb teachers, while we boast superior learning,

taste, and sense, and that their weakness puts down our strength. That there may be a man who cannot give intelligible oral instruction to poor rustics on the principles of Christianity, I will not deny ; but such a one ought not to be in orders, for he will never either read or preach in an edifying manner. And I will own that to do this in such away as to display superior talents must be the lot of but a few because superior talents implies what few possess. But that it requires superior talent to do this, in such a manner as to profit the people, is notoriously the reverse of fact. Every man is not eloquent, but every one can speak so as to be understood and attended to in his own particular business when he is quite in earnest—*e.g.*, a farmer can give his labourers a tolerable lecture on the work they are to do, a housekeeper always finds tongue enough to teach the servants to cook and sweep, &c., and so of others. All but the regular ministers of the Gospel ! We alone have not a word to say on our own professional subject to the people placed under us for instruction ! Why, if a mechanic were thinking (as we are too apt to do) of the opinion his apprentices would form of him as a speaker, he also would, I dare say, begin to feel nervous and modest, and would be content to read them a written discourse on shoemaking—and the shoes would never be made. As it is, it is for his interest that they should learn to make shoes, and therefore he finds words to teach them how.”—Vol. i. 70—72.

To which we cannot refrain from annexing the following letter to his friend Copleston, who had become Bishop of Llandaff :—

“Alban Hall, October 17, 1865.

“I was surprised and gratified to hear so favourable an account of the state of your diocese, labouring as it does under the disadvantage of the Welsh language. The difference, however, is perhaps greater in appearance than in reality ; at least, I am certain that in a vast many instances the clergy address their flocks in a language quite as unintelligible to the lower orders as English to a Welshman. And if they do not go about to the cottages, and instead of talking to the people, get *them* to talk and state their own impressions, the failure remains undetected. Now, at Eastbourne, Dr. B——, who was there when we visited it, and who used a very plain simple style, and did a vast deal of good, has been succeeded by a man who preaches, in a very audible voice, very orthodox sermons, in well-turned sentences, not one of which I am confident any one of the lower classes can make head or tail of ; and, consequently, those who had acquired a desire for religious instruction have gone in flocks to the meeting-house. It is often contended that this is a proof that the preceding pastor must have been methodistical, which seems to me very rash ; it only proves that he had imparted a hunger and thirst after *some* kind of religious instruction. Now, suppose the other some years hence succeeded by such a man as Dr. B—— ; would all who have

then become Dissenters come back to the Church? No such thing. If an active and judicious minister could in the course of several years reclaim a few, one at a time, it would be no small credit to him. The one change is like the upsetting of a ship, so that most of her cargo is canted at one shock into the sea; the other, the fishing-up piece by piece, at low water, scattered portions of that cargo. So that in consequence of these alternations (which must be of frequent occurrence), the result is, that the Church establishment is ultimately weakened even by the pious diligence of some of her own ministers. A continual drain is kept up of the most thoughtful and careful among her children; the stupid and apathetic continue to go to church because their fathers did so before them.

"And thus we are in the condition of Laban when Jacob kept his flocks: all the vigorous and thriving turn out ringstraked and speckled, and the feeble ones alone remain white, and continue in our flock. Then some people, observing the extravagances which many Dissenters fall into, say, 'Oh, we don't want anything of this kind introduced into the Church—these fanatics' had better be out of the pale than in;' as if they would of course have been just as wild had they remained among us. This is like the mistake many ignorant people are apt to make when they see a patient whose whole strength is drained away by an abscess—'Oh! this must be carrying off bad humours; such a discharge as that would be poison if returned in the body;' not knowing it *was* sound blood, flesh, and bone, though now corrupted."—Vol. i. pp. 72—74.

Long before this time, Dr. Whately had matured his opinions on most of the pressing practical questions of the age, whether ecclesiastical or political. One of these upon which he seems most early and most earnestly to have pressed his views, was University Reform, a subject which he continued to urge and argue wherever he had influence, until he had the satisfaction of finding his own principles in the ascendant, and the work of reform in the Universities steadily advancing. He may be regarded as, more than any other man, the father of University Reform. His friend or disciple, Dr. Hinds, had a great part in carrying out the work. A very long and interesting letter, to a friend whose name is not given, relating to this subject, is assigned by Miss Whately to about the year 1830. Many able letters and passages of letters on the same subject are printed in the two volumes.

A kindred subject, in which Dr. Whately was deeply interested, was that of general Church reform. Complete schemes of Church reform may be found in these volumes, containing suggestions which may yet some day be turned to good account. All the arguments and proposals agree well with the principles of the *Letters on the Church* to which we have

already referred. What Whately desired, was the absolute autonomy of the Church of England; that is, of the clergy and laity of that Church conjointly. He would have had the Church so reformed, so reconstituted, as to provide for its internal self-completeness—its independence of all political influence or state control, and its power of self-development—on the basis of a full recognition of the Church-rights of the laity. The revival of Convocation he could not regard as a direct step towards this consummation, however it might indirectly or collaterally tend to create the sense of its necessity. On this general subject he was the earliest, the most earnest, and the most influential, as he was doubtless also one of the most enlightened, of ecclesiastical reformers.

“Did I show you, or communicate to you,” he says in a letter to (Bishop Copleston), dated Dublin, July 30, 1832, “the substance of my correspondence, last winter, with the Archbishop of Canterbury? It relates to a matter which more and more occupies my thoughts as my appearance in Parliament approaches. The Church has been for one hundred years without any government, and in such a stormy season it will not go on much longer without a rudder. I earnestly wish, on every account, that he, or else some other bishop, could be induced to save me from coming forward in a manner most distressing to my feelings, as I must do if others will not do.”—Vol. i. p. 167.

At the date of this writing he had left Oxford for Dublin about a year. His general views had, as we have seen, been matured long before.

Besides university reform and ecclesiastical reform, political reform had, of necessity, engaged the earnest thoughts of Dr. Whately; especially in two branches—parliamentary and criminal. It is somewhat remarkable, that so enlightened and thorough a political economist appears to have had so little to say respecting free-trade, and fiscal reform as bearing upon that subject. Possibly the reason may have been, that the aspect of free-trade in its grand application to the trade in grain, appeared, at least in its first incidence, to be unfavourable to Ireland; and, accordingly, from considerations of prudence, he abstained from pressing or publishing his own views on a subject as to which his personal interposition did not seem to be necessary. A free-trader he was, of course, as a disciple of Adam Smith and an ex-professor of political economy could not fail to be; but this was not one of the subjects on which he exerted any special influence. On the subject of parliamentary reform,

however, we have before us an elaborate letter, addressed to his friend Senior, a few weeks before his elevation to the See of Dublin. The date appears to have been August 8th, 1831; but, in absence of mind, Whately dated it, "8th October." It shows, as Mr. Merivale remarks, that, "like a true Aristotelian," Whately "was in favour of the timocracy of that philosopher, or system of cumulative votes according to property." With this qualification, he would have given the primary suffrage universally. But this primary franchise would have given votes not for the direct election of members of Parliament, but for the election of "deputies," who themselves should be the direct electors. His plan would thus have resembled in more than one particular that now established in France, while it would have very closely approximated in character to the Prussian system of representation. He would have relieved the House of Lords from the presence of the episcopal bench, but, at the same time, would have removed the prohibition which precludes a clergyman from being elected to the House of Commons. He objected to the £10 suffrage, as not only very low, but arbitrary and unequal, and one which must lead to mere universal suffrage. He would have allowed no candidate either for the office of deputy or of member, personally to ask a vote. The primary electors he would have had to vote by ballot, the deputies *virâ voce*.

Nine months later, after he had been installed in Dublin, he writes as follows:—

"Here, as well as elsewhere, we are of course in a state of much anxiety about the Bill and the Ministers. I myself should be very glad to have a reform considerably different from the proposed one, but I feel a little doubt that the time for it is irrecoverably past. The people have no confidence (nor can I blame them) in those who opposed all reform as long as they could, and now are preparing their vaccination when the smallpox has broken out. If the Bill had been thrown out in the Commons, there would have been a hope; but when it has passed an unreformed House of Commons, and one, it may be said, elected expressly for the purpose of trying the question, the people will never, I think, endure the vote of the Lords. If a Tory ministry should come in, and dissolve the House, I shall anticipate the late scenes in Paris. And the worst of it is, whatever turn things take, I can see nothing that bodes well to the Church Establishment; I fear its days are numbered."—Vol. i. p. 159.

Perhaps there was no subject on which Dr. Whately argued and agitated with so much or such beneficial effect as that of criminal reform. To him, much more than to any other

man, the nation, and especially what were formerly the penal colonies of Great Britain, owe those results in regard to penal reform, especially in the matter of secondary punishments, which have been embodied in the criminal legislation of the last twenty years, and all that deserves to be regarded as political science upon this subject. These volumes afford most abundant evidence of the tenacity with which Whately held to his enlightened and philanthropic views and purposes. When he began his beneficent and unostentatious, although most effective, agitation of this subject, he had scarcely a supporter. Most were apathetic; many were bitterly opposed to his views—especially indolent or merely routine politicians, and short-sighted selfish men, who were connected by trade or property with the Colonies; nay, the Colonies themselves were at first his fiercest antagonists. But Whately lived to see all this changed; and, although few comparatively understood the share he had had in bringing about the reforms, which have saved our most magnificent colonies from ruin, to him it was ample reward to see how his ideas had taken root and brought forth fruit.

On the subject of criminal reform, indeed, much yet remains to be done. The substitutes for death and transportation are often, and in most serious respects, very unsatisfactory, and indeed very injurious, in their effects both on the criminals and society at large. All this Whately was well aware of. He held that the English system of dealing with criminals was very faulty. The Irish system, of the superior efficiency of which there can be no question, represents to a considerable extent the Archbishop's own views. But still England has entered on the field of improvement; the public is alive to the evils which need to be rectified; and sooner or later the right path of administrative reform will be struck.

On this subject a valuable memorandum is published in these volumes, from the pen of Mr. Senior, giving the substance of a conversation between the Archbishop and himself so lately as November 16, 1862. Among other things said by the Archbishop was this:—"It is difficult to conceive the state of mind in which a man, familiar with penal jurisprudence, could come to so monstrous a conclusion as that convicts ought to be let loose on the public, without reference to their individual fitness for pardon." What we desire to quote, however, as most memorable, is Mr. Senior's own summing up on the whole matter. Let it be remembered that these are the "words of the wise." Mr. Senior was unquestionably a sage, as well as an accomplished and expe-

rienced, man ; we should think that, to considerate public men, his words will be " as goads."

" 'I perfectly agree with you,' I said, 'as to the propriety of making long sentences irremissible, except by Act of Parliament. Nor would I allow to justices and magistrates their present discretion. Every crime should have its fixed punishment. The caprice of a magistrate or of a judge should not decide whether a murderous assault should be punished by a six months' imprisonment or by six weeks, or by six years. The lenity shown by our judicial authorities to acts of violence, is one of the strangest phenomena in our present penal administration. I would go further still. I would return, and return largely, to the only irremissible punishment, death. I would punish with death, three days after conviction, every person convicted a second time of robbery, accompanied by violence. Experience shows that such malefactors are never reformed. They go on from crime to crime until death. I would cut their course short, in pity to the public and in pity to themselves. The common answer, that robbery ought not to be punished by death, lest murder should be added, for the sake of concealment, does not apply. The garotter, who strikes his victim down, secures his watch and runs off, has not time to do more. He attacks him from behind, does not fear recognition, and would increase instead of diminish the chance of detection, if he murdered him.

" 'Pity for such men is the weakest of follies. They are wild beasts, and ought to be treated as wild beasts.' "—Vol. ii. p. 397.

A man who has devoted himself to the question of Criminal Reform is not likely to have overlooked that of Pauperism. Here, however, Whately never seems to have solved the problem before him in a positive sense. He had got so far as to understand that such a system as that of our English Poor-Laws tends, however reformed or guarded, and however administered, rather to perpetuate than to cure pauperism. Hence, although in England, such a system having been established, he felt obliged to regard it as a necessary evil, a nuisance, to be abated as far as possible. He was utterly opposed to the introduction of the system into Ireland at all. On no subject did he write more largely, or exert all his powers and influence more energetically, than to prevent the passing of the Irish Poor-Laws. But Whately failed to see, at least he failed to show, how, in default of Poor-Laws, and especially after the Irish famine, the poverty and mendicity of Ireland were to be dealt with. Hence he failed in his opposition. The problem of our national pauperism still remains to be grappled with. Hitherto most people have been content, even those who

are called statesmen, to regard as the only practical question, How best the pauperism may be provided for in reservoirs and prevented from overflowing the land? Instead of regarding our Poor-Law system, in its present extent and character, as a temporary expedient, they look upon it, and even contrive to fatten a little English pride upon it, as a national institution. Whereas, the real question, the only question for a statesman, or philanthropist, or philosopher, to recognise, is, How shall the fountain of our national pauperism be healed and stayed, and its streams thus be dried up, while the existing mass of regular pauperism is by degrees absorbed into the general community of provident industry? It appears that even Whately did not venture fully to face the problem of English pauperism. He probably looked to free-trade, emigration, and colonisation on an extensive and growing scale, after the Colonies had been freed from the pollution of a nation's consigned criminality, as the most obvious, and the sufficient, remedies for the pauperism of England. It is likely that when, more than thirty years ago, he was, with singular comprehensiveness and sagacity, clearing and maturing his views on public and national questions, he little thought that, in spite of Poor-Law Reform, Free-Trade, and Criminal Reform, the Pauperism of England would, in the year 1866, be so huge, so costly, and so corrosive an evil in the body politic as it is, "eating" still, "as doth a canker."

It is evident from these volumes that the Archbishop's cure-all for Ireland would have been the payment of the priests. He would not have passed the Irish Poor-Law; he would have salaried the Romish priesthood. "The two great evils of Ireland," he wrote to Dr. Hinds in 1848, are "the non-payment of the priests, and the Poor-Laws." By the payment of the priests, he imagined, Ireland would be permanently tranquillised, and brought into a condition of social amenability and progress. This would lead to capital being introduced; capital to employment and better wages; and so forth. Doubtless in this he was, even as an economist, mistaken. The malady of Ireland lies deeper in the soil of the country than any question of ecclesiastical economics. But, in this opinion, he did but share the views, not only of the leading statesmen of his own generation and the preceding, including Tories of the school of Pitt, but of such men among his own friends as Copleston, Hinds, and

Senior. And any one who desires to know how much can be plausibly and persuasively said in favour of this view, so as to recommend it to the acceptance of Protestant divines and statesmen of the highest integrity, and of eminent sagacity, as a measure not only necessary, but most just, and not only calculated to settle Ireland, but to conduce to the progress and prevalence of Protestantism, cannot do better than read the correspondence and the conversations, relating to this question, which are published in these volumes. Earl Russell, we observe, still clings to this standard Whig prescription for Ireland. We observe, also, that the *Times*, which as to many points seems, from time to time, to reflect the obsolescent Whiggery of five-and-twenty years ago, every now and then shows a leaning in the same direction, in which, moreover, it is followed by the *Post*, which is substantially of the same political school. Of course, if their view is right, Mahometanism and Hindooism, within the British Empire, ought to be directly paid out of imperial revenue, if not otherwise provided for, on condition that they disallow all practices opposed to our common and statute law; and, much more, all Protestant Denominations which might be willing, ought to receive State-pay.

Such a man as Whately was not likely either to be indifferent as to the subject of Slavery, or to be on the wrong side. He knew the West Indies familiarly, through his early and intimate friends, and by reading and inquiry, almost from his youth up. The earliest letter printed in these volumes relates to a book on the subject of Jamaica, and of negro and planter's life there, written by his friend Senior's brother.* And there are many passages in his letters which refer to the subject of slavery. Bishops Copleston and Hinds, Mr. Senior and himself, were fully agreed here, and were as staunch and earnest as they were enlightened in their antagonism to slavery.

We also learn that Archbishop Whately contributed to the *North British Review* an article on Mrs. Stowe's *Uncle Tom*, as Mr. Senior did to the *Edinburgh*. Moreover we note, in passing, for the special benefit of curtailed contributors to Reviews, that the Archbishop had to submit to the reduction of his article by one-third or one-fourth; "some valuable parts," as he simply and quietly says, "being excluded for want of room."

* *Charles Vernon*, by Colonel Senior.

Such was the man, such his training, and such his strain of opinion and tendency, who, in September, 1831, to his own utter surprise and astonishment, and scarcely less to the astonishment of the ecclesiastical and political world in general, was by Earl Grey requested to accept the high position of Archbishop of Dublin, a preferment which he was destined to fill with eminent fidelity and ability, for more than thirty years.

Whately was visiting his friend Arnold, at Rugby, when the following letter was put into his hand at the breakfast-table:—

" Private.

" Downing-street, Sept. 14, 1831.

" Rev. Sir,—Having been ordered by the King to recommend for his Majesty's consideration the name of a person well qualified by his eminence in the Church to fill the vacant Archbishopric of Dublin, I have, after most diligent inquiry, satisfied myself that I shall best accomplish the object which his Majesty has in view by proposing that you should be nominated to this high situation.

" I need not point out to you the important duties annexed to it, more especially at this moment, when the most unrelenting care, under the direction of a firm, enlightened, and conciliating spirit, will be required to preserve the Church of Ireland from the dangers with which it is surrounded.

" An anxious wish to engage in this arduous task the qualities best fitted for its successful execution, and the persuasion, derived from your high reputation, that they will be found in you, have alone induced me to make this offer, your acceptance of which will afford me the sincerest pleasure. May I request an early answer to this communication ?

" I remain, with great respect, sir,

" Your very obedient, humble servant,

" GREY."

Whately "glanced over" the letter, "and, quietly putting it by, talked at breakfast of indifferent subjects; no one suspected that it contained matter of so much interest to all present."

"That Whately's lofty character, and high reputation as a scholar and a divine," says Mr. Merivale, "fully justified his elevation, was admitted by all. But there was much speculation, at the time, as to what especial reason could have occasioned an appointment so much out of the common run, open to cavil from so many quarters, and so little 'safe' in the ordinary ministerial sense of the word. Whately had neither family nor personal interest, nor connection with Ireland; he was entirely detached from all parties, religious or political; he stood alone, in the insulation of a singularly proud as well as inde-

pendent mind. We have Lord Grey's testimony (given in his lordship's evidence before the Committee appointed to inquire into National Education in Ireland, 1837), that when he offered him the archbishopric, he had never spoken to, written to, or to his knowledge seen him."—Vol. i. p. 99.

It is probable that it was on the suggestion of his friend Senior, who had great influence with such men as the Marquis of Lansdowne and Earl Grey, that Dr. Whately was nominated to this preferment. Whencesoever the suggestion may have come, it is certain that we have here an exemplary instance of high preferment bestowed on a perfectly independent man, from pure considerations of character and qualifications, such as appeared eminently to fit him for the position he was to occupy. There can be no doubt, moreover, that as a political appointment, considering the crisis of public affairs, in England, at which it was made, and especially the restless and inflamed condition of Ireland, and the perils surrounding the Irish Church, together with all the difficulties belonging to the question of Irish national education, the nomination was as sagacious as it was bold. Let us suppose that such a man as Bishop Philpotts, on the one hand, or as Archbishop Sumner, on the other, had been appointed to the See of Dublin; and we may be able to conceive, in some measure, how special were the advantages, for the sake of Ireland, and even looking at the whole future of the Irish Episcopal Church, in having as the Archbishop of Dublin one who, whilst thoroughly Protestant, had no sympathy with the spirit of Orange animosity and proscription; who, whilst thoroughly liberal, had an honest and wholesome dislike of O'Connell, and disapproved of all mere truckling to him and his "Irish Brigade;" who, whilst certainly no Tory, was quite as little of a Radical, and, though appointed to office by the Whigs, could never be regarded as a Whig partisan; one who, in fine, though not without his serious errors of judgment and policy, was, on the whole, the most independent and disinterested, as he was one of the most enlightened and large-minded, not merely of the prelates, but, which is much more to say, of the public men of his day. If we were to look at only one matter, the part which, with a noble disregard to prejudice, obloquy, and opposition, to all except the national well-being, and his own duty, the Archbishop sustained, for so many years, in connection with the National Board of Education, we should hold that Earl Grey, as the first minister of the crown dis-

pensing preferments in a State Church, in such a season of revolutionary ferment as the year 1831, must be held to have been most amply vindicated in his choice. Some serious theological objections might have been, and indeed were, by the Bishop of Exeter, taken to Dr. Whately's appointment. But it may be doubted whether any other man could have been found, intellectually and physically competent for the preferment, against whom objections as serious might not have been alleged. The Archbishopric of Dublin, at the time when Whately accepted it, was, in simple truth, incomparably the most difficult post to fill in the whole range of the ecclesiastical polity of Great Britain.

The spirit in which Dr. Whately accepted the appointment will be seen from the following extracts :—

"He had a short struggle," Mrs. Whately writes in her *Reminiscences*, "in making up his mind to accept an office which to him involved much personal sacrifice. He had to resign a mode of life to which he was much attached, with duties in which he took a great interest, and among friends whose society was both dear and agreeable to him ; while, on the other hand, great and painful responsibilities, duties as yet undefined, and difficulties little known, must inevitably meet him in Ireland. To balance all which, he did not possess even the ordinary love of place or desire of distinction, in the vulgar sense of the word. Nor did he want wealth, for we enjoyed a competence which met our wants and wishes. But the conviction that an important line of duty was opened to him, decided his acceptance."—Vol. i. p. 98.

"The words of his old friend the Bishop of Llandaff will further illustrate the spirit in which he entered on his new office. 'Dr. Whately,' writes the Bishop, 'accepted the arduous station proposed to him, purely, I believe, from public spirit and a sense of duty. Wealth, honour, and power, and title have no charms for him. He has great energy and intrepidity—a hardihood which sustains him against obloquy, when he knows he is discharging a duty, and he is generous and disinterested almost to a fault. His enlarged views, his sincerity, and his freedom from prejudice, are more than a compensation for his want of conciliating manners. When his character is understood, he will, I think, acquire more influence with the Irish than he would with the English.'"

"A similar tribute was given to his character by his friend Dr. Arnold, some time later :—'In Church matters they (the Government) have got Whately, and a signal blessing it is that they have him and listen to him ; a man so good and so great that no folly or wickedness of the most vile of factions will move him from his own purposes, or provoke him in disgust to forsake the defence of the Temple.'"—Vol. i. pp. 101, 102.

We have said that Whately was not in any sense a mere party man, neither Tory nor yet a mere Whig; still less a Radical. In a letter to his friend Senior, dated in 1849, he says: "Will it not be necessary for the Whigs and Tories to combine against their common enemies, the Radicals?" And he had been too much behind the scenes to put any trust in professedly Whig statesmen, merely as such.

"After all," he says in his private note-book, "Lord Melbourne's plan was to let everything alone, good or bad, till forced to make a change. He was the highest Conservative I ever knew. For he was not like many so called, who have really persuaded themselves that such and such alleged abuses are really good; he saw in many cases, and has often pointed out to me, the evils of such and such institutions; adding, however, that he was very sorry they should ever have been meddled with: 'I say, Archbishop, all this reforming gives a deuced deal of trouble, eh? eh? I wish they'd let it all alone.' . . . He differed from the Whigs in deprecating all changes, good or bad; he differed from the (other) Tories in conceding readily what he saw to be inevitable. Yet this man will probably go down to posterity as a zealous Reformer! A monument to Sir R. Peel and the Duke as the authors of Catholic Emancipation, and Free Trade, and the Maynooth Grant; and to Lord Melbourne as the friend to Parliamentary Reform, to the Irish Temporalities Act, and the Abolition of Slavery; these should certainly stand side by side, and a most laughable pair they would be. 'I say, Archbishop, what do you think I'd have done about this slavery business, if I had had my own way? I'd have done nothing at all! I'd have let it alone. It's all a pack of nonsense. Always have been slaves in all the most civilised countries; the Greeks and Romans had slaves; however, they *would* have their fancy, and so we've abolished slavery; but it's great folly, &c.' And this was the general tone of his conversation, and a specimen of his political views."—Vol. ii. p. 452—3.

Mr. Merivale remarks, with unquestionable truth, that

"Generally speaking, Whately occupied an intermediate position through life, between the high dogmatic school in the Church, and the school which refines away dogma into mere sentiment. Neither suited his positive turn of mind; the first, because most of their doctrines seemed to him to rest on mere assumptions; the second, because a religion without distinct doctrines was in his view impossible. The articles of his creed were therefore few, but they were adhered to with great steadiness."—Vol. i., p. 105.

There were, as we have intimated once and again, legitimate and not unimportant objections, on theological grounds, to Whately's preferment. Nevertheless, whatever might be his mistakes, here and there, in interpreting it, his reliance

on Scripture was absolute. In a letter to Lady Osborne, relating to the Romish Practice of Invocation of Saints, he says, "I ask for Scripture proof." "I always cast anchor on the Scriptures, "which is common-ground to both parties."* In another letter (dated 1841) he says to an episcopal correspondent :—

"You are quite right in what you say of the Tractites. 'The horse is not quite escaped which drags his halter.' Our Church, in breaking loose from Romish corruption, carried off a piece of the halter. Their object is to get hold of the end of the halter, so as to lead off the horse captive, not back to his own stable, but to one of their own—much like it—in which he is to be hoodwinked and grind in their mill. . . . I have not seen the notice of the Bishop of Winchester's charge. The ———† has been much lauded by some for one of his, in which he censures No. 90, yet says that tradition is the appointed interpreter of Scripture. I don't know what the Tractites would desire more, for they will take good care to make themselves the judges of what is tradition.

"How much more just to say that the *Christian Scriptures* were the appointed *interpreter of tradition*; coming *after* it, the books were written *from* the very Churches which had already embraced Christianity on oral teaching, and designed to clear up what was doubtful in it, to supply what was deficient, and to guard against error which might creep in, 'that they might know the certainty of those things wherein they *had been instructed*.'"—Vol. i. pp. 490, 491.

"The Archbishop," says "a Friend," "had a deep reverence for the Scriptures, and the doubts by which he lived to see them assailed were very painful to him, even to hear of. 'Have you ever read any of ———'s books?' he asked me one day, mentioning one of the leaders of the 'doubting school.' I replied that I had not. 'Then do not read them,' he added. 'If I were ———, I would deny the whole Bible at once; that would be much less trouble than picking it to pieces as he is doing.'"—Vol. ii. p. 438.

In a valuable letter, addressed to Mrs. Arnold, and dated 1849, he criticises with much acuteness, F. Newman, J. H. Newman, and Coleridge, and others who deny or disparage the external evidence on behalf of Christianity.

Of Maurice's writing he says :—

"It reminds me of a Chinese painting, in which each single object is drawn with great accuracy, but the whole landscape, for want of perspective, is what no one can make head or tail of."—Vol. ii. p. 302.

In short, Whately was a devout Christian and a most intelligent and thorough Protestant; he was equally opposed

* Vol. ii. pp. 192, 193.

† This blank should no doubt be supplied by *Primate*, meaning the *Irish Primate*.

to Rationalism and to Romanism. His insight into the essential character of Romanist error was very keen. Writing to Dr. Dickinson (at that time his chaplain) from Milan, he says :—

“The cathedral is the most gigantic idolatrous temple I ever saw. It is a pain to me to visit such places. The chief idol is the Virgin and Babe. I marvel at those persons who admire the devotion of Roman Catholics, and their stepping in at any hour of any day to say their private prayers in the churches, which are always open. It is the very essence of their error, in making a temple of a Christian synagogue.”—Vol. i. p. 432.

It is well understood now—indeed, Mr. Palmer, in his well-known “Narrative,” did not scruple to avow it—that the real secret of the bitter animosity of the Tractarian party against Dr. Hampden, on his nomination to his professorship in 1836, was not the doubtful or latitudinarian character of his theology as to certain points, but the fact that he had broached and was prepared to support the idea of admitting Dissenters to the University. Nothing could exceed Dr. Whately’s indignation at the tactics employed in this case by Newman and his friends. But his antipathy against the “Tractites,” their principles, their fashions, their manner and spirit, was altogether most intense.

Writing to Mrs. Arnold in October, 1842, he says :—

“Never, surely, did the world more need the warning against ‘false prophets in sheep’s clothing :’ though the fleece is so very thin it is a matter of wonder that intelligent men should so generally fail to see the wolf beneath it. So very simple a contrivance as that of using words in new senses generally the very opposite of the old, seems to answer the purpose.

“‘Humble-minded’ men are especially to be guarded against; the word means what used to be called arrogant and insolent; on the other hand, the worship of God only, and a deference for Him and His Word, beyond what is paid to any mortal man, is, now-a-days, ‘profaneness and self-conceit;’ a ‘pure and holy man’ is one who fasts twice a week, but ‘neglects the weightier matters of the law, judgment, and justice, and mercy.’ I think the ‘holy men’ who garbled and distorted Hampden’s *Bampton Lectures* with the deliberate design of holding him up to the hatred and persecution of unthinking bigots, are the genuine descendants of those Roman emperors who dressed up the early Christians in the skins of beasts, and then set dogs at them to worry them to death.”—Vol. ii. pp. 20, 21.

In all things Whately was one of the manliest of men. Nor could anything vex him more than to see any fashion of unmanliness spreading, whether in the church or in society.

How strongly the earnest, self-reliant man, who had, unbefriended and single-handed, made his own way in the world, speaks out in the pithy and pointed letter we are about to quote!

"April 7th, 1846.

"My dear Mrs. Arnold,—I am half provoked when I hear people talk of a dry study by which a young man is to obtain a comfortable and respectable subsistence. If this is to be the general tone of 'Young England;' if they think to live in Lubberland, where pigs run about ready-roasted, and the streets are paved with plum-pudding, we shall have some Young Englanders of the humbler classes telling us that driving a plough is dry work, and that they would rather employ themselves in bird-nesting.

"Why there is Senior, a man of the highest talents and most varied tastes and acquirements, who drudged at conveyancing for his livelihood; and, I may add, had leisure hours for the study of political economy and literary criticism, which as a barrister he would have had no chance of.

"Who, except a man of fortune, has a right to say he will only follow his own tastes and inclinations?"

"In haste, yours affectionately,

"R. WHATELY."

"P. S.—Give my regards to my grafts and buds at Foxhow."—
Vol. ii. p. 93.

But we have far overpassed our due limits, and now must bring this article to a close. We have, indeed, for some pages past, been giving a few fragments out of material which we had looked out for the preparation of a sketch of the Archbishop's life during his residence, for more than thirty years, at Dublin. We had intended to give some view of Irish parties and Irish society at the time he went to Dublin; to show how piercing was the Archbishop's insight into the character of the people and parties around him; to describe his home, his study, and his garden-life (to a large extent his garden was his study, whilst he seemed to be only and leisurely intent on digging, trimming, pruning, grafting, and practising curious experiments on his plants); to show how immensely the National System of Education was indebted to him, as a faithful and impartial administrator, as composer of admirable elementary Lessons, as a liberal but faithful Protestant, and on what grounds he at length, in his character of Protestant representative, retired from the Board of Direction. We had marked for quotation passages explanatory of the effects of the National System, as administered in his time,

on the Irish mind; and of the various causes which some years ago, before the setting in of the late accessand exasperation of Romish bigotry, under the instigation of Paul Cullen, contributed to a manifest improvement in the character of Irish Romanism, and to produce a considerable number of real conversions from Popery to Protestantism. The Archbishop's enlightened zeal for the founding of a "divinity college" or "theological seminary," although, through political and ecclesiastical prejudices, after years of labour on his part, and notwithstanding his own generous offers for its endowment, it was, on the very eve of apparent success, doomed to be most painfully disappointed, would yet have claimed a conspicuous place in our sketch. In this, as in so many other matters, Whately was before his age. What he had so set his heart upon for Dublin, is now being extensively carried out in various dioceses, English and Irish.

The Irish famine, especially in connection with the Archbishop's own untiring exertions and princely munificence, would have claimed more than a passing notice. The episode of his unhappy friend, Blanco White, which, with the letters from the Archbishop relating thereto, occupies a large space in these volumes, should have been given in outline.

If we had been able to give so far complete a sketch, we should also have felt it necessary to note the serious administrative error into which he was led, as we cannot but think, in inhibiting the Rev. R. Kyle from officiating as a curate in his diocese, because of his connection with the Evangelical Alliance.

At the same time, it would have been pleasant to show how liberal, frank, and generous, he was in his relations with his clergy in general; and to have sketched those monthly dinners at which, in the freest and heartiest manner, he was accustomed to receive them.

What he was, during the last thirty years, as an ecclesiastical politician and member of the House of Peers, will not, even in these hurried times, have been altogether forgotten by general readers. He was throughout—as on his Church and State principles, which, in general respects, were antagonistic to those of his dear friend Arnold, he could not but be—a supporter of the measures for removing Jewish Disabilities. He took a chief part in the correspondence, the private proposals and discussions, and the parliamentary action and debates, which had for their results the Irish Tithes and Church Temporalities Acts. The strong reasons which determined his course in these measures are set forth

at length in the letters now published. On all the particulars, indeed, which we have indicated, as well as on many more which we have not been able to refer to in this article, these two volumes contain letters or memoranda of the highest interest.

But we must leave all this. Nor can we even find space for any extracts from the touching record of his final decline and his last days, which is here given. Let us note only that whereas, sad to say, his habitual "veil of reserve," to use his daughter's words, "had hitherto made the 'inner life' a mystery, hid even from those nearest to him," in the notes furnished by those who attended on him in his latest days, we see "the veil somewhat lifted," and are shown "how the same simple trust in Christ as the only Saviour, which has smoothed so many an humble death-bed, was to be the stay and the staff of the mighty thinker and writer while crossing the 'valley of the shadow of death.'"^{*} When Mr. Dickinson read to him 2 Corinthians, chap. iv., "he followed the chapter with tears and silent prayer, and at the end pronounced an emphatic Amen." The eighth chapter of Romans seems to have been his favourite chapter in his final pains and mortal weakness. He died on the 8th of October, 1863, aged seventy-six years.

Thus passed away, in the fulness of age and of honour, one of the ablest and most upright men of the past age. With all his defects of manner and of judgment, he was a wise, a great, and a Christian man. He was also a praying man, and one who valued prayer increasingly as he grew older. It is notable when such a man, so strong, so naturally proud, so self-reliant, comes to ask for the prayers of others on his own behalf. So did Whately again and again long before his last years. His faith in God, his reliance on Scripture, his trust in Christ, were absolute. Verily, "a prince and a great man" he was in Israel, and "a mighty man of valour." -

In conclusion, we venture to suggest that from these volumes, from his unpublished correspondence, Mr. Fitzgerald's memorials, and public sources, Miss Whately or some intimate and competent friend, such as Mr. Merivale, should prepare a real biography of the Archbishop, illustrated by letters and extracts of letters. There are a thousand points of interest and importance connected with the life of Whately about which no direct information at all is given in these volumes.

* Vol. ii. p. 413.

If such a thorough biography of this great man were written, not a little of the fillings in of the letters here given, interesting as they all are, might be spared, the quintessence of them having been extracted, and the life would become a standard work for all students of English history, and all lovers of English worthies. As it is, we must end by repeating what we said at the opening of the article, that to the ordinary reader, to all in fact who do not read up elsewhere for the occasion, much of the interest and instruction of these volumes must be lost. This is the greater pity, because we know of no volumes of modern biography so rich as these in the materials of interest and instruction.

BRIEF LITERARY NOTICES.

An English, Hebrew and Chaldee Lexicon and Concordance to the more correct understanding of the English Translation of the Old Testament by reference to the Original Hebrew. By William Wilson, D.D., Canon of Winchester. Second Edition, carefully revised. Macmillan : London. 1866.

DR. JOHNSON or Wesley would clap his hands for joy at the sight of this volume. And a crowd of living students of English, Hebrew, and the Scriptures, especially those of them to whom the three are one, will be ready to do the same, when they become acquainted with the contents of Dr. Wilson's elegant and most useful work. The handy, handsome quarto, bearing the title given at length above, must henceforth be considered the book of the class to which it belongs. Both Messrs. Bagster's very valuable "Englishman's Hebrew Concordance," and the former edition of Dr. Wilson's own work, must now yield the palm to the "English, Hebrew, and Chaldee Lexicon and Concordance," as it here presents itself for the benefit of all Bible-reading Englishmen at home and abroad. It is often matter of interest to the mere philologist to know what Hebrew or Chaldee term or terms stand for any particular word in the Authorised Version of the Old Testament, or, *vice versâ*, how any particular word in the original has been represented in English by the authors of our version. For the intelligent reader of the Word of God, and especially for the preacher, this knowledge, never to be despised, may throw open world beyond world of doctrine and thought, which would otherwise lie quite unrevealed, and so may serve to further most directly and effectually the highest ends of Christian life and instruction. Dr. Wilson's book is framed for the purpose of answering the questions just indicated ; and within the limits which he found it needful to prescribe for himself—limits which, we think, he has wisely drawn—he has done this with great precision and exhaustiveness. The only literary equipment which an educated Englishman will need for the profitable use of the work is ability to read the Hebrew characters, and such an acquaintance with the general constitution of the Old Testament languages as may be obtained by two or three days' study of a brief section of Dr. Wilson's book, in which the requisite information is all made ready to his hand. So provided, the English reader of the Old Testament will find in Dr.

Wilson's book a mine of most curious, interesting, suggestive, and useful information. Let such a reader desire, for example, to ascertain what word in the Hebrew is represented by the term, "sacrifice" occurring in Exodus iii. 18. Let him, further, be disposed to inquire whether the same English is uniformly employed in our version as the exponent of the same Hebrew original; or whether on the one hand "sacrifice" is used as the translation of more than a single Hebrew word, while on the other this or that Hebrew word is rendered now by "sacrifice," now by some other English equivalent. Dr. Wilson supplies the answers, and more than the answers, to all these questions. He tells us not merely what Hebrew word stands in our passage for "sacrifice," but likewise in what grammatical form it appears, and what is its strict and proper value as determined by the best critical authorities. Moreover he gives a complete list of the instances in which this English expression, whether noun or verb, is used in the Authorised Version as the counterpart of this same Hebrew. Not only so. He informs us that eight other Hebrew words are translated "sacrifice" in the version. He distinguishes the meanings of these several words. And he furnishes exact catalogues of the places in which they may be found. Last of all, he explains, whether the Hebrew terms in question are invariably represented in the English by the word "sacrifice," or whether other terms are employed to denote them, and if so, what terms, and in how many cases they are used. This will serve as an index to the general character of Dr. Wilson's work. Pronouns and particles are excluded from his plan for reasons which are obvious. The introduction of them would rarely have answered any good purpose; and they would have swelled the volume to inconvenient dimensions. We could wish that the author had brought the proper names of the Old Testament within his scheme. An English-Hebrew and Hebrew-English Concordance of the Old Testament proper names on the plan of Dr. Wilson's work is a great desideratum for English readers of Scripture. The absence of the proper names from Fuerst's Hebrew Concordance is a serious drawback upon the value of that otherwise most valuable work. Dr. Wilson has our best thanks.

Ruth: an Historical Poem in Four Cantos, illustrative of the Sacred Narrative. By William Mackenzie, M.A., author of "French Concordance to the Holy Scriptures," &c. Edinburgh: Inglis and Jack. London: Hamilton, Adams and Co.

In all spheres there is some one thing the best of its kind. The various states of human society—pastoral, agricultural, industrial—have been exhibited in different circumstances of climate and surrounding influences, by races of dissimilar aptitudes, at various ages of civilisation, and some have exemplified more faithfully than others the type to which they belong. It is natural that we should look to the

Holy Land, rather than rude Arcadia, or corrupt and wretched Italy, for the brightest and happiest ideal of rural life in the ancient world. The divinely ordained institutions of Israel made them for more than a thousand years the most exclusively agricultural and pastoral people that ever existed. Every family was rooted to the same modest inheritance, handed down from generation to generation, and inalienable so long as the lineage was not extinct. It was only to be expected that the position and configuration of the divinely chosen land, its relation to surrounding countries, its soil and climate, would be found to work along with the purpose conveyed in such institutions, and that all combined would bring about a state of society presenting fortunes as nearly equal as possible, manners simple and cordial, redolent of traditional piety, all ranks enjoying an open-air life of healthy labour, the highest conceivable hopes for their country, and for the whole world shedding a dignity unknown elsewhere upon the most ordinary occupations, and teaching the very humblest the self-respect that should accompany the consciousness of a noble origin.

The Book of Ruth gives us a glimpse of such a state of things, deliciously suggestive as it is of the piety, simplicity, modest virtues, and domestic affections, that doubtless developed themselves among the wooded hills, and highland pastures, and vine-clad slopes of Palestine, as they could not in idolatrous lands. The first verse shows that it was written under the monarchy, and as it carries down the genealogy of Pharez no further than David, it was probably written under him or his successor. Moreover there is a fulness and a freshness in the narrative that forbids its being considered as a very old tradition. David more than once alludes to his mother as one who had consecrated him to God from his birth. She can have seen Ruth, his husband's grandmother, and heard from her own lips the tale that we may suppose to have often charmed the ear of the future psalmist when he fed his flock in the fields, where Ruth had gleaned after the reapers of Boaz ; and, by the bye, when David sat upon the throne he was not ashamed of his lowly ancestors rich in faith.

The purpose of the writer seems to have been to explain how the blood of a Moabitish woman came to be mingled with that of Judah in the veins of the king of Israel, and to illustrate by her history the blessing that under the theocracy was sure to follow devotion to the service of the true God. Ruth makes her election for widowhood, poverty, and loneliness, with the fear of God, and she has all unconsciously chosen domestic happiness, wealth, honour, and the sympathies of a pious population. Naomi wishes to be called Mara in the bitterness of her soul, but the Almighty in His providence vindicates her title to the more auspicious name, and the neighbours give the name of Obed (servant) to the little child that lies on her bosom, because he is the minister of God to cheer and comfort her old age. The tale begins with famine in the land of promise, and with the heaviest domestic afflictions ; it ends in joy, and that the preparation for wider and more lasting blessing. The great theme of the Bible as a whole

is repeated and reflected even in temporal things, and woven into all the parts and fragments of the Bible.

It has been observed that in ages of luxury and splendour refined minds are wont to seek relief in the contrast presented by pastoral scenes: Theocritus flourished under the Ptolemies, and Virgil found admirers in the age of Augustus. We cannot but think that the author of this exquisite little narrative expatiates upon rural scenes and customs with the more fondness, and reckons upon meeting with sympathising readers the more surely, because he had before his eyes the glory of Solomon, the chariots of Egypt, the productions of India, the throne of ivory, the cedar palace and the guards with shields of gold. It is surprising that such an idyl of real life, and that connected with the ancestry of the Son of Man, and with those fields where the anthem of angels was yet to be heard by mortal ears, has not been oftener celebrated by the religious poets of England. The author of the little volume before us has undertaken to atone for this neglect, and he, at least, has most thoroughly entered into the spirit of his subject. Mr. Mackenzie follows the sacred text as closely as possible; the four cantos correspond to the four chapters, and only amplify them to the degree necessary to fill up the picture of which the outlines are given. The few subordinate personages introduced, one or two elders and matrons of Israel, and an ill-natured gossip of Bethlehem, serve to draw out the real historical characters more distinctly, and to distribute the lights and shadows of the various scenes. The aspect of the land of Judah in early harvest, the arrival of the way-worn pilgrims at the well of the little town, the cordial reception given to the widow and her interesting proselyte, the greetings interchanged between the hearty landowner and the reapers, with the whole picture of the habits of a substantial agriculturist on the table-land of Judah, the keen observation—the silent and motherly foresight of Naomi, the chaste confidence of Ruth, the love of the generous and high-minded Boaz, all the deeper for having been kindled in the autumn of life, the nuptial feast, the sympathy of her neighbours with Naomi's joy—the whole succession of bright scenes, graceful usages, gushing feelings, and symbols full of meaning, are made to pass before us in poetic array by one who feels—and helps the reader to feel—their beauty.

Mr. Mackenzie is evidently thoroughly conversant with Jewish archaeology, and with the geography of the Holy Land. Without dryness and pedantry he is always true to the local colour, to the ways and the thoughts of the period in which the scenes are laid. The introduction of a Sabbath at Bethlehem, and the description of the way in which he supposes it was observed, are of a happy effect. He has also judiciously interrupted the monotony of the metre by short lyrical pieces: the song of the Labourers at the far-famed Well, Jotham, the Shepherd's Morning Hymn, the choruses at the Wedding, and the prophetic song at the circumcision of Obed.

Our author represents Boaz as feeling a growing attachment to Ruth even before his formal assertion of her claim upon him as a near

kinsman. This does not appear to us a mere romantic interpolation in deference to European ideas, and in order to make the story more interesting; it is justified by the sacred narrative itself if due allowance be made for the objective character it exhibits in common with all writings of extreme antiquity. The author of the Book of Ruth confines himself to facts. He leaves us to gather the feelings of Boaz from what he did or said, without attempting to describe them or to trace out their origin and progress like the modern subjective historian or novel writer; but the acts of the rich kinsman were of a kind to embolden Naomi to make Ruth take a step she would not probably have thought of otherwise, and the event that justified her sagacity is also the justification of the way in which the modern English poet conceives the story.

The English and their Origin. A Prologue to Authentic English History. By L. O Pike, M.A., of Lincoln's Inn, Barrister-at-Law. Longmans.

WITH considerable argumentative skill, in a winning—because a modest and tentative—manner, and with an unmistakeable air of careful research and earnest conviction, Mr. Pike has written this book to prove that the preconceived ideas of most Englishmen as to their origin and race, are totally at variance with their history, with their physical and psychical characteristics, and scarcely to be reconciled even with their language and grammar. Mr. Pike thinks that historically, physically, and psychically we are proved to be, not Teutonic as in our humility we have vainly imagined, but Cymric well-nigh every inch; and being Cymric, then philology steps in to demonstrate an intimate connection between our own and the grand old Hellenic race.

Criticism on the philological part of his thesis is earnestly, and we think wisely, deprecated by the author. He regards philology as a guide whose directions are only to be valued as suggesting possibilities, not as indicating certain solutions of historic difficulties. A theory that accords to us an affinity with a race to whom we have been accustomed to attribute many of the highest physical, mental, and moral virtues, is undoubtedly flattering to our national pride; but our calm judgment will require more convincing proofs than all the verbal coincidences—derived, perhaps, through widely divergent channels, from a common Aryan stock—that are here enticingly presented to us.

In his historical section, Mr. Pike has made good use of his excellent powers of analysis, by showing us on what meagre and untrustworthy evidence is based the generally-received notion of an overwhelming Teutonic element in the English nation. We think that he has not been equally successful in his attempt to construct a new theory on the ruins of the old, with a Cymric origin and development as its basis and essential constituent. Granting the accuracy of his estimate of

the comparative credibility and value of the conflicting evidence, we can still allow only this much—that as far as regards the testimony of history, the disciples of the Teutonic and Cymric theories respectively have very nearly equal claims to our belief and respect; or rather, that they appear to suffer, the one school as much as the other, from the hopeless obscurity and perplexing contradictions of the only extant authorities.

In his chapters on the physical and psychical evidence, Mr. Pike again indulges in a gush of national self-gratulation. The ideal Englishman is the personification of Aristotle's *ἰσορροπικός*, attaining the happy mean of perfection in every physical, mental, or moral quality; and, as such, is constituted the *κατὰ τὴν φύσιν* of every excellence of race. The ideal German character is shown to fall either into excess or into defect, also in every category, very far beyond the corresponding deflexion of the High-Celtic or Cymric standard; that is, the latter approaches much more nearly to our own excellence, consequently our nature must be more akin to the Cymric nature than to the Teutonic. These positions can only be fairly attacked in detail; we must be content if, in this place, we have suggested a line of exhaustive analysis that will lead to a discovery of their weakness.

We are not convinced by Mr. Pike's arguments; at the same time we cannot but allow that they are well and clearly stated, and urged with energy and tact. His book furnishes material for much useful and interesting study.

Le Confesseur. Par L'Abbé * * *, author du Maudit. 1866.

THIS is the fifth of this instructive series of religious tales. The author has announced a sixth, "The Parish Priest." Indeed he seems determined to go from beginning to end of the Church system, and to show that his plan of reform is everywhere applicable, and that the evils against which he has been protesting are not of the essence of the faith. This is, of course, the question for whom it concerns. Is there any real substructure of truth in Popery, or have the outgrowths of ages (like some destructive kind of ivy) so eaten into the old fabric that it is wholly perished—that nothing, in fact, is left except the extraneous additions? As a priest in the Romish Church, the Abbé * * *, of course, takes the former view. He holds that a return to the pure faith and practice of early days is not only possible, but that it is the only way of preventing a thorough break up of religion in all Romanist countries. Ultramontaniam and the nineteenth century cannot go on together. Either Popery must cease to be Ultramontane, or (having already ceased to influence the man to any great extent) it will before long become utterly powerless beyond the narrow circle of a few fanatics. The mischief is that the extreme party will not see this. They are clinging more and more to their "idols," they are multiplying forms, erecting doubtful tenets into dogmas, talking of confession, for instance, as the most powerful engine for influencing

society, at the very time that among the men the practice of confession has almost wholly ceased. Confession, however, of the auricular kind is still (as the story before us shows), though powerless on society at large, exceedingly effective in bringing money into the pockets of the religious orders. It is the fashion just now in Paris among the old noblesse to be thoroughly good church. Every great lady has her "director"—a very different person from the parish priest whom her mother thought competent to hear her confession, and to whom she herself used probably to go till "the noble faubourg" became so suddenly Ultramontaine. As in the days of St. Francis de Sales, your monkish "director" only cares for the rich and great. Ordinary folks may get what they can from the parish priest; but those who have leisure to follow up the "councils de perfection" deserve the patient care of a man who has had the special scholastic training which enables him to analyse the feelings, and to hunt the sin through all the hiding places which modesty and reserve would fain provide for it. Of course with most people this "direction" is a mere matter of fashion. It hinders neither their business nor their pleasures. A marchioness boasts she takes the sacrament twice and confesses once a week, and yet goes to every ball and has her box at the opera just like other folks. Her "director" is a Jesuit, and "the good fathers are wonderfully kind in managing these matters. They know very well that one must according to one's station." The Jesuits, by the way, are said to be the great match-makers among the "best families" in France. You have a scamp of a son, who (you think) ought *de ranger*; but how can you get him a suitable match when he has spent every farthing of his money? Tell your trouble to your "director:" he'll send the young gentleman to fight "on the right side" at Castel Fidardo, and when he returns will so brag of his heroism that half the heiresses in France will fall in love with the mere description of him. Match-making is the grand subject of the present novel. A Dominican father, Jérôme, has preached himself into popularity, and has got two or three highly aristocratic souls to superintend. A retired banker's wife, coming to settle in Paris, wishes to get into the best society. She is told that the very first thing is for her to get the right sort of "director." She comes to Jérôme, "simply dressed as one ought to dress in a church." He is scarcely civil to her. But when she comes in rich and highly fashionable attire, with a letter from the marchioness, her cousin, he knows not how to be gracious enough, and secretly makes up his mind to get one of her daughters for a *protégé* of his, Hector de Chantonnay, who has been steadily writing up the Dominicans, and who proposes with what money he gets to set up a newspaper in the Dominican interest—a rival to that *Monde* which has been so useful to the Jesuit party. He easily manages to get Madame Deville, the mother, under his entire control. Poor woman, she had been for twenty years a good wife and mother, and had never suspected, till the "way of perfection" was pointed out to her, how many had been her shortcomings. Good woman as she

was, she was very weak-minded; letting her husband lead her from a sense of duty. Under the monk's guidance, she learns that a higher duty sets aside a husband's authority, and soon gets rather to revel in her newly acquired freedom. Then Jérôme plays on her fears about her soul. Unless she breaks off her eldest daughter's engagement and leaves her free for De Chantonay, she is told that her hope of salvation is quite gone; and by working on this selfish feeling of self-preservation, Jérôme so terrifies her that she goes into wild hysterics, under the influence of which she so terrifies her poor child as to make her promise to give up her affianced lover. The monk seems now to have the game in his own hands, when suddenly his *protégé*, De Chantonay, spoils everything by really falling in love with Laurence, the eldest daughter, and determining not to let her be trapped into an engagement with him. This somewhat prosy individual, who is for ever making soliloquies, calling Sire de Chantonay, and consoling himself under the discomforts of hack authorship by a reference to the old glories of his race, determines to act on the principle, "noblesse oblige." His Dominican friend has disgusted him by pooh-poohing very coarsely all ideas of affection as a necessary element of marriage, and by telling him that its sole end is to secure money for pious uses and to breed children who shall be sound in the faith. In fact, Father Jérôme has grown insolent with success. He has had a zealous ally in Marie Deville, the younger daughter, a wild, enthusiastic girl, who even goes beyond him in her fanatical efforts after "perfection." When he takes the opportunity of M. Deville's absence to force his way into the library, and to weed it of all "dangerous books," Marie applauds him. But there is a certain young Count de Lavinières staying at the house, a cousin of the Marchioness, who has fallen in love with Marie—likes her all the better for her impulsive ways—but determines to get her away from Jérôme's control. So he proposes to burn the bad books, as they would have done "in the ages of faith;" Jérôme and Marie are delighted, and (in spite of Madame Deville's timid protests) there is a grand *auto-da-fé*, Bossuet and the other Gallican heroes being as ruthlessly condemned as Gresset's *Vert-Vert* or Boileau's *Lutrin*. By and by, however, Marie thinks about this affair, and her thoughts are not altogether favourable to her Dominican "spiritual father." Just then, too, De Chantonay acts up to his resolve. He finds Laurence Deville does not love him, rather despises him as a fortune-hunter, and "not on such terms can he consent to be made happy;" so he stops the letter which the poor girl had written to discard her lover in dread that her mother would go mad, and telegraphs to the lover to come with all speed. There is a grand scene. De Chantonay says (very justly), "There; I think I know a little more of what self-sacrifice means than Father Jérôme does." Laurence is to be married in a month, and every one is delighted except Madame Deville, who is haunted by a vague fear of what the monk will say. He, of course, is imperious, and writes her such a letter that the poor woman goes stark mad, leaps into the water, and is pulled out a hopeless lunatic. Jérôme's letter is

picked up; and when Marie has read it, she willingly agrees to marry the Count in spite of his warning that "a wife of his shall never go to confession." "The wretch," says she, "he has killed my faith just as he has destroyed my mother's mind." This is the moral of the book, and indeed of all our author's novels. The "*sect*," those "Pharisees of Catholicism" (as he calls them, claiming true Catholicity for himself), are ruining the cause of religion, while they fancy they are doing it a service. How convenient, by the way, on this boasting about an Ultramontane, to find that, by their own confession, the men of every class have slipped away from them, and the women only follow them for fashion's sake, and (in many cases) to make their directors serve their worldly ends. Count de Lavinières is a sincere Christian when the story opens; Marie might (under anything like decent training) have become a veritable saint. They are both so shaken in the very foundations of their belief, that it will need all the efforts of M. Deville, and of the inevitable liberal Churchman, who comes in here as in all the Abbé's novels, to show them that there is such a thing as true godliness apart from the miserable mummeries and vile chicanery which make up Father Jérôme's religion. Yet Jérôme is no hypocrite. He is not a whit like the wicked, sensual monk whom so many writers have delighted to draw; he is all the more dangerous because of his "honesty of purpose," if we may use the term, to represent a thorough conviction that he has the truth, and that all means are not only justifiable but commendable when employed to set forward the interests of his order. Beginning his monkish career with selfish desire for his own personal advancement, he ends by being so utterly self-deceived that the grossest frauds, the sheerest extortion seem to him merely matters of course, if discrimination can possibly be thereby enriched. Naturally the system is open to other dangers. All men have not Jérôme's cold temperament; and the "erratic theology" of which our Abbé gives us, perhaps, rather too many examples, but which he admirably illustrates in its effect on Jeannette (Madame Deville's country-bred maid) of course leads to fearful evils in other directions. Besides the chapters illustrative of the practice of the confessional, our Abbé gives a very lively sketch of its history. He shows how the old system of public declaratory absolution gradually gave way to the "fuller absolution" (the *ego te absolvo* instead of *deus te absolvat*), which comes after private confession. There were several reactions against such a plain inroad of priestly tyranny. Under St. Chrysostom's predecessor (for instance), it was abolished, owing to a gross scandal. But it was too precious a power to be given up; and the coming in of the barbarians (to which our Abbé traces so much of the evils of mediævalism) enabled the clergy to push their claims, though auricular confession was not made compulsory till the thirteenth century. Such is our author's book — an endeavour to show that one of the many outgrowths of the dark ages is not an essential of Christianity. Why, then, does not the Abbé * * * turn Protestant? we may ask, especially

when we find him regretting that "the Church failed to learn the lesson of the Reformation, and that the reaction which followed it in Catholic countries kept the masses in the bond of ignorance, and, therefore, did the Church no real good. All he says about Protestantism is this: "Y a eu dans le premier effervescence du Protestantisme des éliminations trop radicales, que regrettent maintenant les esprits sages chez nos frères séparés." He is not referring, we must remember, to Dr. Pusey and his *Eirenicon*; the Reformed Romanist Church to which he looks forward is something which would scarcely satisfy our Unionists. In one direction he is liberal to the verge of laxness; on the other hand, he clings to the title of Catholic, repudiates Protestantism as unsuitable to the genius of the southern nations, and says that the indispensable reform, to be of any real value, must come from within. How this is to be, when the influence of the extreme party over the clergy seems growing, and their suicidal blindness increasing along with it, it is hard for us outsiders to determine. *Index non viyet in Gallia* always was (we are reminded) the proud motto of the Gallican Church, and yet, we are told, that, except the Paris clergy (under their liberal archbishop) and the Sulpicians (who are hated and plotted against by the Jesuits), there is not a priest in France who dares open his mouth against any innovation or tyranny on the part of the Ultramontanes. Our Abbé, no doubt, has grounds for his hopes of reform; yet even he is clearly awake to the importance of the crisis. "Now or never," is his appeal to the religious feeling of France. "If you don't give up monkery and its childish yet wicked absurdities now, you will surely see the whole fabric of religion crumble hopelessly before your eyes." Undoubtedly a great change is imminent in Romanist Europe. How it will be wrought, whether in the Abbé's way of internal reform and self-purification, or by a thorough break up, followed by re-construction, He only knows who will surely turn even the fierceness of man to His praise. One thing is clear—French people know very little (compared with the same class of people among ourselves) about even the historical part of religion. Papists and infidels have alike kept them from the Bible. When Madame Deville (in this novel) talks of reading up the Gospel, the monk reminds her that, "whatever parish priests may say, none of the 'regular clergy' ever advise the reading of that dangerous book." Our course, then, is plain. Let us do what we can to spread God's Word, and let us leave the result to Him.

1. The Church and the World: Essays on Questions of the Day. By various Writers. Edited by the Rev. Orby Shipley, M.A. London: Longmans. 1866.
2. Ritualism in the English Church in its Relation to Scripture, Piety, and Law. By Robert Vaughan, D.D. London: Jackson, Walford, and Hodder. 1866.

THE plot for Romanising the Church of England, which was laid in Oxford thirty years ago, has brought forth abundant fruit, and has

indeed been successful far beyond what could have been thought possible at the time when the voice of authority stayed the pen of the author of *Tract XC.*, and the hand of discipline was laid weightily on Dr. Pusey, because of his doctrine of the Eucharist. The volume of essays entitled *The Church and the World* has come already to a second edition; and a second series of essays, a supplementary volume, in which the views of Anglican Romanism are to be still more fully and variously developed, is announced by Messrs. Longmans; that great house having been selected as the publishers of this ill-omened combination, for consummating the ruin and disgrace of the Church of England, and for Romanising this once Protestant realm.

The reception given to the volume already published has been so favourable on the part of High Anglicans, while the opposition which it has called forth has been so moderate, so little vehement in its tone, and so far from universal or overwhelming, that it is little wonder if the party are encouraged to publish a supplementary manifesto, and to proceed to even greater lengths. And yet, strange to say, the views even thus far developed in *The Church and the World* are very far in advance of anything which Newman ever ventured to broach in the *Tracts for the Times*. All England, five-and-twenty years ago, was at a white heat of indignation, was in a long-sustained tempest of Protestant wrath and terror, because of the discovery at Oxford of a conspiracy for de-Protestantising the National Church and its formularies. Now the sappers and miners trained by the pioneers of the Romeward movement have made their way up to daylight, and are openly at work breaching the defences of our Protestantism, and tampering with the defenders. And yet no shout is raised against them; scarcely a shot is fired from the garrison; the chief opposition to the party in the trenches being from certain irregular auxiliaries of the besieged outside the walls. Nay, from the manner in which the leaders of the enemy go coolly in and out, it would seem that some of the sentinels have been corrupted, and probably also that some of the superior officers of the garrison are in understanding with the besiegers. We had hoped it might not have been necessary to notice this volume of essays. But now that the supplementary volume is announced, and that a second edition of this book has appeared, we find we must have something to say respecting it, and had better get it said before the supplement comes out. We are less unwilling to do so because of Dr. Vaughan's excellent little volume, to which we can refer all who wish to understand the merits of the ritualistic movement, and to be furnished with an adequate criticism and reply.

Dr. Pusey in his *Eirenicon*, and in a subsequent special publication, has endorsed and adopted most fully all that is taught in *Tract XC.*: but he has in his *Eirenicon* done more than this; he has developed a system of doctrinal accommodation as to all the points which he deems to be essential in the determinations of the Council of Trent, for the special and express purpose of facilitating the Romanisation of the Church of England, and such as is in advance of anything which Newman taught

whilst still at Oxford. He has also, administratively, by his connection, during many years past, as Confessor, with certain Anglican monastic Sisterhoods, and by the spirit of unyielding monkery, in which he has acted as Confessor, stedfastly and most powerfully promoted the spread of that supplementary code and gospel of celibacy, which is one of the master-evils, which is so foul a curse, in Popery. The *Church and the World* may be said, in a word, to be an embodiment of Dr. Pusey's theology as given in outline argumentatively in the *Eirenicon*, and as practically supplemented by his example and his official relation as father-confessor of celibate sisterhoods, gathered and secluded under the seal of a vow.

Of the eighteen essays in the volume, indeed, there are five which can hardly be said to bear a part in the teaching of such a doctrinal system as we have indicated. These are—the first, on “University Reform,” by Professor Rogers, of Oxford, the advanced Liberal, the co-worker with Mr. Goldwin Smith and Professor Fawcett, the admirer and defender of Mr. Bright, whom it is really surprising to meet, although he may be a High Churchman, on the threshold of such a fabric of anti-English mediævalism as the bulk of this volume; one on the “Eucharist,” by Mr. Medd, which must have found its way into this volume by an oversight of the editor, since, though in a sense High Church, and advocating a stately and significant ritual, it teaches the universal priesthood of believers, repudiates the thought that the Eucharist is in any just sense a sacrifice, or the officiating clergyman a sacrificing priest, or that there can be any iteration or renewal of the one Sacrifice of the Cross, offered once for all by the one Priestly Mediator, Jesus Christ, and, in fact, teaches no higher doctrine of the Eucharist and its spiritual efficacy than is taught in two fine hymns of Charles Wesley, which Mr. Medd quotes at large; and three others, relating respectively to Church Architecture, Science and Prayer, and Positivism, which seem to us to be of no special significance whatever, out of place in this volume, and hardly worth printing anywhere. But the other thirteen essays are all of one sort, all hang well together, and, in combination, present such a *tout ensemble* of doctrine as we have indicated.

Supernatural priestly power in sacramental consecration, in confession and absolution, in confirmation and ordination; and celibacy, as proper, they hardly as yet dare to say necessary, for the priesthood, as an advantageous discipline for all devoted servants of the Church, whether men or women, and as a “counsel of perfection” for all; these are the constituent elements of the doctrine contained in this volume; to which, of course, must be understood as appertaining such views in regard to the schismatic state of all Protestants, and such pitiful shifts and advances towards “reunion,” as it is phrased, with the Greek and Latin Churches, as the public is familiar with.

The argument as to supernatural priestly power has been pretty well discussed, and is familiar to most well-informed Protestants; although, in truth, the extent to which the theurgic claims of Anglican

priests are allowed is very surprising, and implies an amount of ignorance respecting this cardinal point of the controversy existing between Protestantism and Popery, among people supposed to be well-informed, which could hardly have been anticipated, and which makes one feel as if a modern Chillingworth would be a great blessing to these times. But we anticipate that the point of celibacy is that which the Romanising party are now about to push with all their energy and appliances. No fewer than five of the essays in this volume bear directly on this subject. Some plausible things are said in favour of priestly celibacy, and for monastic orders of preaching friars; while all that can be urged on behalf of sisterhoods, bound by a vow, even a life-vow of celibacy, is stealthily and cunningly insinuated. "S. G. O.," indeed, has shown very clearly in his late famous letters to the *Times*, that such a supramundane character of sacro-sanct authority and power as that which is claimed by the professed hierophants and priests of this theurgic mysticism, which calls itself Catholicism, can only be accredited and sustained by such a renunciation of the world and all its common-places, its ordinary interests and ties, as belongs to the separate training, the celibate life, the seeming abstraction from the world, which give character to the Romish priesthood.

Dr. Vaughan has done well in publishing this volume on *Ritualism*. As respects one branch of the subject represented by the High Church volume, it is an admirable digest, brief, comprehensive, conclusive. Here the lawyers may find valuable help towards disentangling the legal quibbles and sophisms, and finding their way through the misrepresentations of such writers as the essayist on the *Reasonable Limits of Lawful Ritualism*; while the Bible Christian will find the principles of Scripture admirably brought to bear on the controversy. Here, too, with a calm insight and fine impartiality such as well become a Nonconformist leader like Dr. Vaughan, at his time of life, and after a life devoted to historical, ecclesiastical, and philosophical studies, pursued in the spirit of a Christian minister and divine, the Anti-Ritualist shows us where the strength of the Ritualist party lies, what have been their merits, and how it is that bishops find it scarcely possible to take any positive dealing with them. Let Dr. Vaughan now give us a companion volume on the subject of celibacy, and he will have supplied all that is needful on the most pressing and alarming question of the present day.

Fas est et ab hoste doceri. The Anti-Ritualist may strengthen himself by the testimony of the Ritualist; the "Dissenter" and the "Methodist," to whom Mr. Baring-Gould so often refers, will be foolish not to avail themselves of the concessions and evidence yielded by this "Mission-Priest" in his essay on the *Revival of Religious Confraternities*, and by his brother Littledale in his essay on *Ritualism*. What these two witnesses unite to teach with much variety and fulness of piquant illustration, is, that there are two styles and methods of religious teaching and indoctrination which are "popular," which tell upon the poor and homely and unlettered, and which may serve the

purposes of missionary zeal and propagandism, that of the Romanising Ritualist and that of the plain, fervent, unembarrassed and unritualising, *extempore* preacher, whether Methodist itinerant, or Dissenting layman, or Romanist friar; and that there is another, and in a sense an intermediate sort and style of religious service, which does not attract, but repels, the rude and as yet unevangelised population, which is and can be prized and relished only by those who are already possessed of some culture and refinement, and have come under some preliminary Christian training, and this is the stately and beautiful, but staid and intricate, liturgical service of the Church of England. Non-conformists will be much to blame if they do not learn a seasonable lesson from the vivid and truthful picture given by Mr. Baring-Gould of the northern countryman's first attendance at Church-prayers.

Temporal Prosperity and Spiritual Decline ; or, Free Thoughts on some Aspects of Modern Methodism. By a Wesleyan Minister. London : Hamilton, Adams, and Co. 1866.

We think this book would have been better unwritten. The author's motive is unquestionably good, and he says many things that are wise and true, and worth pondering ; but he writes under an insensible bias. You know from the outset exactly how he will pronounce on all the points to which his argument is directed. He deals with the real or supposed evils of his denomination in the manner best fitted to confirm prejudice without producing conviction. The very worst champion that truth can set to fight her battles, in times like the present, is an oracular religious dogmatism, armed with a feeble logic, and capable of seeing over but a narrow area of contemporary feeling and thought. We like what the author hints and insinuates even less than some of the doctrines which he lays down in words. Altogether, this work is neither very strong nor very judicious.

The Primitives of the Greek Tongue, compared with the Hebrew Roots, or Parallel Hebrew Words. By Rev. James Prosser, M.A. London : W. Macintosh. 1865.

How far the literary dial goes back in this work we do not care to say. It is a curious example of the retrogression which is possible, where there is only weakness enough to ignore or repudiate the surest deductions of reason, and to attempt to galvanise into life the dead bones of the past. Mr. Prosser's book is a hotch-potch of truths stated without discrimination, of empiricisms dating from before the birth of science, and of boundless blundering and dogmatism, where the first demand of common sense was caution and exactness. We advise all who wish to make acquaintance with the "Primitives of the Greek Tongue" to eschew most carefully the guidance of this hallow and misleading book.

The Bible Word Book: A Glossary of Old English Bible Words. By J. Eastward, M.A., and W. Aldis Wright, M.A. London and Cambridge: Macmillan and Co. 1866.

INTELLIGENT students of the English Bible, whether ministers or others, will thank us if they are led by our recommendation to purchase this cheap, handsome, and very useful book. Its object is "to explain and illustrate all such words, phrases, and constructions in the Authorised Version of the Old and New Testaments and the Apocrypha, and in the Book of Common Prayer, as are obsolete or archaic." It is not the first time that a work of this sort has been published, but we know of none that will compare with Messrs. Eastward and Wright's volume for exact learning, for judicious treatment, and for simple and effective presentation of its manifold particulars. It is scholarly without being pedantic; it is full without overcrowding. The illustrations are taken chiefly from writers of the sixteenth century. Mr. Wright justly observes, that, "in considering the language of our English Bible, we must bear in mind that it has become what it is by a growth of eighty-six years—from the publication of Tyndale's New Testament in 1525, to that of the Authorised Version in 1611. Further, it must be remembered, that our translators founded their works upon the previous versions, retaining whatever in them could be retained, and amending what was faulty. The result was therefore of necessity a kind of mosaic, and the English of the Authorised Version represents, not the language of 1611 in its integrity, but the language which prevailed from time to time during the previous century." Accordingly the golden age of our English literature is made to give forth its lights, and the result is an illumination of a multitude of dark places of the English Scriptures, such as will be gratefully welcomed by a crowd of struggling readers. Mr. Eastward is beyond the reach of human thanks, but he will live in the labours which his well-known colleague has so ably supplemented and enlarged.

The Epistles of St. Paul to the Ephesians, the Colossians, and Philemon: with Introduction and Notes, and an Essay on the Traces of Foreign Elements in the Theology of these Epistles. By Rev. J. Llewelyn Davies, M.A. London: Macmillan and Co. 1866.

"Nec nil neque omnia hæc sunt quæ dicit."

WE might take exception to Mr. Davies's title-page; we certainly do not agree with him, at all points, in his general conception of St. Paul's teaching, much less in his views of particular expressions and passages, and we miss, throughout his work, anything like a distinct recognition of the Divine *afflatus* under which the New Testament was written. Mr. Davies's theology, in fact, neither better nor worse than

that of Mr. Maurice. But there are many true and beautiful things in his book, and if we cannot recommend it as an eminent example of the caution, judgment, and thoroughness, which ought to characterise Christian commentary, we are bound to acknowledge the volume, as well as the ability with which the author has laboured to disentangle the knots of his great subject. The errors and questionable positions of Mr. Davies's book are coupled with abundance of very valuable and suggestive matter. In some cases he is assuredly right, and can hold his own, where prejudice would thrust him away as an innovator, and there are other cases in which it is not easy to say where he is wrong, though our Christian instincts rebel against his doctrine. A wise reader may reap much good fruit from the study of this remarkable piece of critical exegesis.

The Past and Future of the Kaffir Races. By the Rev. Wm. C. Holden. With a Map and Illustrations. Published for the Author. Sold at 66, Paternoster Row, London. 1866.

As a Wesleyan Missionary of twenty-seven years' standing in the Cape Colony and Natal, Mr. Holden is entitled to speak with authority respecting the Kaffir races. He has evidently taken up the subject *con amore*, and has spared neither labour nor pains to render his work thorough and complete. It is a useful, thorough, unpretending, contribution to the science of ethnology, and a not less valuable contribution towards the just settlement of the vexed questions which affect the relations between the natives and the colonists, whilst it constitutes a temperate and able vindication of Christian Missions. The book is divided into three parts. The first treats of the History of the Kaffirs; the second of their manners and customs; the third of the means needful for their preservation and improvement. Each part contains a mass of carefully collected facts, which will be read with great interest; but the last, which treats of the duties of the government, the colonists, and the Church respectively, is, in our judgment, the most able and valuable by far.

With all existing theories respecting the origin of the Kaffir races Mr. Holden is dissatisfied; but whether the one by which he replaces them will be deemed more satisfactory by the reader, we seriously doubt. We will give his own words, that we may do him no injustice. He believes that they came originally "from the neighbourhood of the Tigris or Euphrates." "After deep and long-continued inquiry and investigation," he says, "my opinion is that the entrance of the different races into Africa is much more remote than any attempted to be assigned to it in relation to either Abraham or Ishmael. I am much more disposed to place it in connection with the dispersion at the confusion of tongues, when "the Lord scattered them abroad from thence upon the face of all the earth." I also think that, if no previous great differences of physical conformation existed, God at that

time added to the confusion of languages, distinctions of colour, size, and other family characteristics." This theory is not likely to gain much favour, we apprehend, among scientific men.

The history consists mainly of a record of the warlike career of Utshaka, Udingaan, and Umpanda, great Amazulu chiefs, with whose names the English public are not altogether unacquainted. It is a striking picture of savage life, and especially of the horrors of their warfare. Their wars are not wars of conquest merely, but of utter and merciless extermination. The history of the Amazulus as here presented shows an almost unbroken succession of deeds of treachery, cruelty, and bloodshed.

The second part enters very minutely into the manners and customs of the Kaffirs, and necessarily embraces a great number and variety of particulars respecting the birth and management of children, circumcision, marriage customs, domestic habits, amusements, religion, superstition, &c. Upon all these topics much valuable information is supplied, which, being the result of long and careful personal observation, may be relied upon.

The Kaffirs are described as a superior race both physically and mentally. "The physical conformation of the body is fine; the men ordinarily stand about five feet ten inches to six feet high, slenderly built, but compact and wiry." Of their mental capacities Mr. Holden also speaks favourably. The women are, in both respects, considerably inferior to the men, and are kept in the most degraded position. The moral character of both male and female is painted throughout the book in the darkest colours. Among the greatest offences, in the estimation of the Kaffir, is cattle-stealing: among the least are adultery and murder.

It is the belief of Mr. Holden that the Kaffirs, as an independent people, are doomed. "The stream of colonisation will go on, and overspread Kaffirland, and he is the true philanthropist who would seek so to guide and control it as to make it fertilising to European and Kaffir alike."

Again, he says, "From long experience, and careful observation, my settled conviction is, that he is not the true friend of the Kaffir who would try to keep him isolated and independent; but he who, as changes take place, would secure for him and his children ample lands in perpetuity." The chapters on the Native Land Question, and those on the Province and Duty of the Government, the Colonists, and the Church, will amply repay a careful perusal. To the law of entail, as advocated at page 412, we should decidedly object, as a dangerous restriction upon the operation of natural laws. But, as a whole, the views of Mr. Holden respecting the best means of saving the Kaffir races from extinction, appear to us just and wise. We observe that, on page 2, it is stated that Dr. Barth penetrated interior Africa from the west, whereas he started from Tunis. And on page 7, Abantwana is called the nephew of Utshaka, when, in fact, he was his *uncle*. These errata will need correction in another edition, which we hope

may soon be called for. The map is very full, careful, and satisfactory, and the illustrations are numerous and particularly good.

In concluding, we feel bound to note that Mr. Holden's volume has no rival as respects its subject and its scope. It is full of interest alike to the statesman, the missionary, the ethnologist, and the philanthropist, and no ethnological or missionary library can be complete without it. We hope it may receive due attention from the authorities at the Colonial Office.

Handy Book of Rules and Tables for verifying Dates. By John J. Bond. London: Bell and Daldy.

CHRONOLOGY has been called one of the eyes of history; and yet there is scarcely any other science of equal importance that has been so much neglected, or about which popular ideas are so much confused. Of the work before us it is not too high praise to say that it is the most important contribution to a thorough knowledge of mediæval and modern chronology that has appeared for many years past. The excellent system of methodical arrangement, the obvious clearness of the tabular forms, and the lucid simplicity of the rules and explanatory statements, combine to render this "handbook" valuable not only as a book of reference for the verification of dates, but also as a manual and text-book for the historical student and the antiquary.

Amongst other points of interest we find here a "Perpetual Calendar"—showing by means of the Dominical or (as it is here called) the Year Letter, on what day of the week any day in the year falls during the Christian era, and as far beyond the present time as may be desired. The most extensive table, and one that well-nigh exhausts the subject of English conquest to the present time, is that of the regnal years of the sovereigns of England within those limits. This table gives the leading dates with the days of the week, &c., in each year; double dates being given from the year 1155 to the year 1751, to show both the English legal year and the Julian year, for days from January 1st to March 24th. The inestimable value of such tables as these, to all who have anything to do with imperfectly dated documents, or who are interested in the study of a period of obscure chronology, cannot be questioned; whilst the prefatory remarks, the rules and explanations, and the history of chronology to be derived from the introductions to many of the sections, must be interesting to every educated person.

Views and Opinions. By Matthew Browne. London: Strahan. 1866.

THE author of this book says: "It is nearly always with reluctance that I write or print; so overwhelming is the sense which pursues me—as it does other men and women with eyes—of the instant work to be done in the world." How the world would have fared if Mr.

Browne had worked instead of writing his views and opinions, we do not know, but we cannot congratulate him upon his having for once overcome his repugnance to authorship. Mr. Browne hates dogmas, especially religious and moral ones; and he fights them with other dogmas. He will have none of your conventional paradoxes, and he crushes them under the weight of more fresh paradoxes of his own, which are not conventional. "Cant" is his especial detestation, and his volume ends with the following passage on the future of human civilisation:—"I apprehend that what I have called the Bacchantic tendency—which neither religion, nor science, nor polity, scarcely art, now touches with but a little finger, and which now simply spots our borders with vice—should some day take on unity and volume, and wake us from our dreams of order and security with a splendid rebellion, for which our economy of crowds has had no thought; for which civilisation leaves no space; but in which God will speak out of His whirlwind again, in tones which will not be understood till they are passed into retreating thunder on the skirts of the skies, and men listen for the echo rather than for the voice." Is this philosophy, or is it—to use a word of the author's—*countercant*? Mr. Browne has published a smart and clever book, full of slang and conceit, which begins in nothing, and ends where it began.

Ireland and the Centenary of American Methodism. Chapters on the Palatines, Philip Embury and Mrs. Heck, and other Irish Emigrants, who instrumentally laid the Foundation of the Methodist Church in the United States of America, in Canada, and Eastern British America. By the Rev. William Crook. London: Hamilton; E. Stock; and sold at 66, Paternoster Row. 1866.

OUR extended notice of this volume cannot, it appears, be inserted in our present publication. In the few lines now remaining at our disposal all we can do is to commend Mr. Crook's beautiful book to our readers as one of rare attractions on a subject of almost matchless interest. The beginnings of American Methodism, itself the most wonderful instance of Church development which the world's history has yet shown, are all connected with Ireland; and in this volume are set forth with a vivid and fascinating freshness and tenderness of colouring.

Sermons Preached in Manchester. By Alexander Maclaren. Second Edition. London: Macmillan. 1865.

THE author of these volumes is, we believe, minister of a Baptist church in Manchester. Whatever his denomination, he is not a chance man, as the sermons sufficiently show. The sneer of weakness, so often thrown at evangelism, will find no target here. The great

doctrines of the Gospel are the soul of Mr. Maclaren's volume; but the flesh which embodies them is not weak. Intellectual force and fire, coupled with much that is delicate in sentiment and nobly tender in feeling, characterise the discourses throughout. The writer's sermon is almost too intense for us sometimes; but his sympathies have nothing in common with the grotesqueness and flippancy of a well-known school of modern preaching. Mr. Maclaren is too manly and too serious to play at pulpit fireworks; and we only lament, that preachers of his moral and mental texture are so few among the churches.

1. *Biblical Commentary on the Old Testament.* By C. F. Keil, D.D. and F. Delitzsch, D.D. Vol. IV., Joshua, Judges, Ruth. Translated from the German by Rev. J. Marten, B.A. Edinburgh: Clark. 1866.
2. *Biblical Commentary on the Books of Samuel.* By C. F. Keil, D.D. and F. Delitzsch, D.D. Translated by Rev. J. Marten, of Nottingham. Edinburgh: Clark. 1866.
3. *Biblical Commentary on the Book of Job.* By F. Delitzsch, D.D. Translated from the German by the Rev. F. Bolton, M.A. Vol. I. Edinburgh: Clark. 1866.
4. *Theological and Homiletical Commentary on the Acts of the Apostles.* From the German of Sechler and Gerok. Vol. II. Edited by D. Lange. Translated by Rev. P. J. Gloag. Edinburgh: Clark. 1866.

We have already given with some copiousness our views of the general character of these expositions. They are learned, reverent, and orthodox; and, on the Old Testament, especially, do much towards filling up a void in English theological literature, which has been long complained of. The student of Scripture cannot habitually consult them without great advantage. Even the polemics, in which they may be thought to indulge sometimes too freely, have their use, in bringing before the reader's mind the subtleties of modern Rationalist criticism, with, generally speaking, their adequate antidote. Vol. IV. is a work of very great interest, being remarkably fresh and exhaustive. The work on Job is a laborious exhibition of the history of opinion, as well as a good commentary. The New Testament books are treated in rather a different style; the practical and homiletic elements are perhaps rather disproportionate, and not altogether in harmony with English tastes. But even these furnish many a valuable hint; while the critical notes are for the most part the condensed result of much reading and discriminating care. We are glad the series is so popular as it seems to be, and heartily recommend them to all young students.

END OF VOL. LIV.

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