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MR. BALFOUR'S "FOUNDATIONS OF BELIEF."

BY GEORGE M. MCCRIE.

It is a remarkable coincidence that the two foremost figures now in the arena of British politics—Mr. Gladstone, the Prime Minister of the past, and Mr. Arthur Balfour, the Prime Minister of the future—should, in the literary world, be simultaneously engaged in the self-same task—that of the defence of the Christian faith. Brought up in widely different schools,—the one, an Anglican High Churchman, the other a Scotch Presbyterian; the one, versed in patristic lore, a lover of traditionalism, and a keen sacerdotalist; the other, every inch a sturdy Protestant, but with a strong dash of that metaphysicism which no educated Scotsman ever wholly lacks—these men, otherwise so diverse in opinion, agree in rebuking so-called "Godless Science," and in advocating a practical reversion, on the part of the thinking world, to the faith once delivered to the saints. Singular, that two writers, starting from wholly opposite premises, should practically reach the same conclusion;—more singular still, that men of such undoubted ability and sincerity, in the face of all the advance of modern thought, religious, scientific, and philosophic, should be found to counsel a virtual submission of reason to authority!

Yet such is the case. Mr. Gladstone's closing years are to be devoted, we are told, to this supreme endeavor. Already, in his past controversy with Professor Huxley, as in a presently appearing article, in a popular American edition of the Scriptures, he has counselled what amounts to a practical retrogression in modern thought—a more or less literal adhesion to the Old and New Testament writings, as the only "rule of faith and manners." And now Mr. Balfour, similarly persuaded, takes the field somewhat after the fashion of Berkeley, and, with Berkeley's own idealistic weapon, seeks to rout the forces of naturalism, agnosticism, and scientific "Godlessness," even as the worthy Bishop sought in his day and by a similar method, to dispose summarily of all deists, Hobbists, and infidels. In lifting the Excalibur of idealism, Mr. Balfour handles a trenchant blade, but it is a two-edged one, which turns every way. It will perhaps be found that, as in Berkeley's case, the weapon he

uses may turn against himself, destroying the self-same conclusion which it was invoked to defend.

Mr. Balfour's latest work, *The Foundations of Belief*,¹ is a suggestive and significant one, but it is neither bracing nor stimulating. Indeed, the author's tone throughout seems to us to be one of profound intellectual weariness. It is the confession of a more or less ignoble intellectual surrender; the *Apologia* of a lesser Newman, at the turning of the ways between reason and faith. It is noteworthy as the contribution of a brilliant essayist to the endless controversy between ecclesiasticism and science, but its note is not a jubilant one—it is one which evidences a tired brain, a mind which flags before the supreme problems of life, and which is fain to hark back upon the affirmations of a creed outworn, as being, after all said and done, perhaps as good and true as any other. Such moods, born partly of weariness, partly of intellectual satiety, are not unfamiliar to even the bravest spirits among us. But in such cases they are transitory;—they pass away with the moment of mental, or bodily, languor which begot them. In Mr. Balfour's case, the mood has become habitual, even chronic. In effect, what he says may be summed up in this inconsequent proposition:

"Since all we know is that nothing can be known, why not revert to the, at all events time-honored, belief in a Living and Personal Deity, as our Creator, Sustainer, and Eternal Home? Since such a belief is, to say the least, just as likely to be well founded as any other—since, indeed, the probability lies faintly in favor of such a hypothesis, as explaining many otherwise insoluble life problems, why not entertain it?"

This shows a tone and a temper impatient and dissatisfied with the slow and gradual, though assured, march of modern science, and eager to find the solid rock of certainty here and now beneath its feet, at whatever hazards. It is a tone and a temper, however, which will fascinate many. Mr. Balfour's Gospel is just the one to suit those who are too indolent and careless to search personally for the truth which makes free. It will help to pacify the timid religionist, zealous for the infallibility of the Biblical testimony, and trembling for the Ark of God. It will be

¹ *The Foundations of Belief; Being Notes Introductory to the Study of Theology.* By the Right Honorable Arthur James Balfour, M.P. London: Longmans, 1895. Price, 12s 6d.

popular—such orthodox utterances of famous men always are. But for all that it has not the ring of honest conviction in it; there is nothing of serious purpose or of strenuous endeavor in its half-hearted pleading—nothing of nobility, nothing of truth!

At the very outset this modern Defender of the Faith makes some notable slips. His book is mainly an arraignment of what he calls "naturalism." The first part of the volume consists of chapters on Naturalism and Ethics, Naturalism and Æsthetics, and Naturalism and Reason. What, then, it may be asked, is "naturalism"? Naturalism, in Mr. Balfour's sense, is the persuasion that we know phenomena, and the laws governing them, but nothing more. But, as Professor Huxley well remarks, in the first part of his criticism of the volume in the *Nineteenth Century*: "Mr. Balfour appears to restrict the term 'phenomena' to those which constitute the subject-matter of the natural sciences, mental states not being reckoned among them,"—i. e. the province of psychology, and hence of consciousness. The attack is really made against agnosticism; "and agnosticism," continues Professor Huxley, "has not necessarily anything to do with naturalism, properly so called." Moreover, "If the 'natural science' of Mr. Balfour is unlike anything known to men of science, it follows that the view of 'naturalism' founded upon it, and the conception of empiricism and agnosticism, which are counted among the forms of naturalism, are equally non-existent."¹

As a consequence of this grave initial blunder, Mr. Balfour does not fight all along the line of the Christian defences. His apologetic is really powerless against those systems of modern thought which take their stand on the newest results in the fields of physics, psychology, and philosophy, and which erect thereon a consistent and reasoned belief as to man's place and purpose in the economy of the universe, his evolution from primordial elements, and his necessary immortality, in conformity with the laws of heredity and of the conservation of matter and energy. All this Mr. Balfour evades. "Godless science," with him, is the foe to be vanquished, and he can descry none other in the field. Believers in [material] phenomena solely, and agnostic as regards everything else, have their moral sentiments naturally depraved. Hence the following passages *inter alia* :

"Kant, as we all know, compared the moral law to the starry heavens, and found them both sublime. It would, on the naturalistic hypothesis, be more appropriate to compare it to the protective blotches on the beetle's back, and to find them both ingenious.

"If naturalism be true—or rather, if it be the whole truth—

¹ *Nineteenth Century*, March, 1895. In the April number Professor Huxley does not continue his criticism. It will probably be resumed in the following issue.

is morality but a bare catalogue of utilitarian precepts, beauty but the chance occasion of a passing pleasure, reason but the dim passage from one set of unthinking habits to another? All that gives dignity to life, all that gives value to effort, shrinks and fades under the pitiless glare of a creed like this; and even curiosity, the hardest among the nobler passions of the soul, must languish under the conviction, that, neither for this generation nor for any that shall come after it, neither in this life nor in another, will the tie be wholly loosened by which reason, not less than appetite, is held in hereditary bondage to the service of our material needs."

Reason, Mr. Balfour maintains, is very much over-estimated. All the important things of life are done without its aid. The subordinate part which it plays in the conduct of life is, however, more fully dwelt upon under the heading of the province of authority. Lastly, under this section, the morality of naturalism [by which we presume the writer to mean agnosticism] is parasitic in character. Illustrating his meaning by speaking of the parasite which lives, and can live only, within the bodies of more highly organised animals, he adds :

"So it is with those persons who claim to show, by their example, that naturalism is practically consistent with the maintenance of ethical ideals with which naturalism has no natural affinity. Their spiritual life is parasitic; it is sheltered by convictions which belong, not to them, but to the society of which they form a part; it is nourished by processes in which they take no share. And when these convictions decay, and these processes come to an end, the alien life which they have maintained can scarce be expected to outlast them."

All that need be said regarding this illustration is that it is not in the best of taste, that it is not, by any means, original, and that it conveys a truism, it being an accepted fact Christianity has invariably claimed a monopoly of all the virtues.

SOME REASONS FOR BELIEF.

Such is the title of the second part of the volume. After what has just been said in depreciation of the functions of reason, it seems a little odd to appeal to the reasoning faculty as having any share in the decision of the question.

Scientific data are assailed with the weapons of idealism, with the view of showing that of all things the testimony of the senses is the least reliable, as being prone to error. Science itself contradicts the popular view, ex. gr. that a green tree is standing in the next field, by its own explanation of the complex series of facts which such an impression really represents. The "red" is not in the rose, it is a sensation produced in ourselves, and so on. Hence, he says—speaking of naturalism :

"We can hardly avoid being struck by the incongruity of a scheme of belief whose premises are wholly derived from witnesses admittedly untrustworthy, yet which is unable to supply any criterion, other than the evidence of these witnesses themselves, by which the character of their evidence can in any given case be determined."

This statement is a singular distortion of admitted physical and psychological facts. It shows to what straits Mr. Balfour is put in order to reduce *reasoned* scientific conclusions to a minimum. Solely on the ground that physical phenomena have often a surface appearance at variance with their scientifically ascertained reality, the testimony of the senses is denounced as "untrustworthy"! Why, one would think that the self-same senses have played their part in the correct interpretation—the required scientific correction—of the surface appearance! It would be quite as logical for our author to argue that the "rising" and "setting" of the sun is an erroneous and thoroughly misleading conclusion. Yet are we not content to speak of the sun as doing so, supplying, if need be, mentally, the correct explanation of the phenomenon which science teaches? In the same way science instructs us regarding the true rationale of the appearance of the green tree in the field: only, as Clifford somewhere says, "we cannot be pedantic all day," so we are content to use the ordinary phrase and to assert that the tree, in all its greenness and other qualities, exists where we see it. So it does, for all practical purposes. There is nothing definitely "erroneous" in such a judgment. Being, however, not a single judgment, but rather a synthesis of many interdependent judgments, it is capable of analysis, that is all.

Mr. Balfour, however, presses the point still further, he says:

"Anything which would distribute *similar* green rays on the retina of my eyes, in the same pattern as that produced by the tree, or anything which would produce a *like* irritation of the optic nerve, or *like* modification of the cerebral tissues, would produce an impression of a tree quite indistinguishable from the original impression, but it would be wholly incorrect."

This would be an ingenious argument, if it were not an erroneous one! The catch lies in the words which we italicise in the above extract. Expressions such as *similar*, *like*, *the same as*, etc., ought always to be employed with the utmost care in argument, and with a precise understanding arrived at, as to the sense in which they are so used. If by "similar," in the above quotation, Mr. Balfour means *identical*, and by "like," *the same as*, then assuredly his argument is faulty. For the self-same retinal image, optic nerve irritation, and changes in cerebral tissue would, if repeated, only produce the self-same impression which would not be "incorrect," but wholly accurate—in other words, would represent the self-same tree! All the elements which go to form the perceptual synthesis which we cognise as a green tree being present once more, the original synthesis would again exist necessarily. If, on the other hand, by the words "similar" and "like" in the above extract is meant only *something approaching to*, or *very nearly the same as*,

then the impression generated would not be that of the tree as formerly viewed, and accordingly it would not be "indistinguishable," but, on the contrary, quite distinguishable "from the original impression." In either case, Mr. Balfour's argument falls.

SOME CAUSES OF BELIEF.

Under this heading, which comprises Part III of the volume, we have a systematic exaltation of authority at the expense of reason. Authority, with Mr. Balfour, stands for that grasp of non-rational causes, moral, social, and educational, which produces its results by psychic processes, other than reason. There are many instances in point. But the objection here is, that, in many cases—the great majority of cases, indeed—in which we act without fully reasoning out the conclusions arrived at, reasoning though behind the scenes is nevertheless the virtually controlling power. I find a summons from a coroner on my table, commanding my presence, in the capacity of a jurymen, at a certain place and date. I instinctively obey the summons, postponing all other engagements in order to do so. But do I act, in such a case, from a blind submission to the coroner's authority, as Mr. Balfour would have it? Not at all. My sense of the imperative nature of the summons is made up, in the last recess, of various previously reasoned-out convictions: ex. gr., the power of the coroner to summon me; my duty to the State, and as a citizen; my knowledge of the penalty for non-attendance, and that I have no valid ground on which to be exempted from serving. All this is a very different matter from blind acquiescence. It is a perfectly reasoned-out process, even though I may not repeat the several steps of it. At the last moment, I may elect not to serve, and to pay the fine for non-attendance, a stronger motive having meanwhile predominated. Nine-tenths of our daily duties are similarly actuated by previously reasoned-out convictions, and such convictions, so stereotyped as to become almost instinctive, really give evidence, not of automatism, or of submission to authority, but of reason *in excelsis*.

Instead of authority ruling, as Mr. Balfour puts it, in the provinces of ethics and politics, science and social life, we would substitute a complex process of what might be called *abbreviated reasoning*. No man dreams of questioning a scientific premise laid down by an eminent savant, on the ground that the experiment has not been verified by himself. It is on the ground of the standing of the savant that it is taken for granted that his experiment has been genuinely tested. Such a one, we know, would not, for the sake of his own reputation alone, hazard a deception. By a process of reasoning identical with or akin to this, we, accordingly, accept his statement on trust. Should

the standing, or *bona fides*, of the scientific man be thereafter seriously impugned, we distrust his after-results—nay, may reject them wholly. All through, the balance of reason continually weighs the *pro* and *con*. Blind submission to authority, on the other hand, believes the impossible, the incredible, even like Tertullian, believes in it “because it is impossible”! Thus taking statements on trust, after deliberation, is like the system of credit in business. Legitimately safe-guarded, it is indispensable in the interests of progress and expansion. We accept many things, on the testimony of those whom we judge to be reliable, which we have neither the time, nor the opportunity, to verify for ourselves. Mr. Balfour, however, slumps all these cases under one heading—that of authority. According to this criterion, the use of a table of logarithms would be a submission of our reason to the authority of the compiler!

SUGGESTIONS TOWARDS A PROVISIONAL PHILOSOPHY.

Here are Mr. Balfour’s “three or four broad principles which emerge from the discussion at this stage.” We append a brief comment on each:

1. “It seems beyond all question that any system which, with our present knowledge, and it may be, our existing faculties, we are able to construct, must suffer from obscurities, from defects of proof, and from incoherencies. Narrow it down to bare science—and no one has seriously proposed to reduce it farther—you will still find all three, and in plenty.”

This is simply an assertion, denied by nobody, of the necessary limitations of present-day human knowledge. But the same human knowledge is hourly increasing!

2. “No unification of belief, of the slightest theological value, can take place on a purely scientific basis—on a basis, I mean, of induction from particular experiences, whether ‘external’ or ‘internal.’”

The expression “theological value” is puzzling. What does Mr. Balfour mean by it? Is it that what is theologically true may be inaccurate scientifically?

3. “No philosophy, or theory of knowledge (epistemology), can be satisfactory which does not find room within it for the quite obvious, but not sufficiently considered, fact that, so far as empirical science can tell us anything about the matter, most of the proximate causes of belief, and all its ultimate causes, are non-rational in their character.”

The “proximate causes” of belief are guaranteed to us by the testimony of consciousness itself, which, so far from being “non-rational,” is the only source of knowledge which we possess. The “ultimate causes,” again, though hypothetical in character, such as ether, atom, vibration, undulation, etc., are far from being non-rational, on that account. They are hypotheses which coincide with the rest of our natural knowledge, and are therefore to be accepted as working hypotheses until disproved or displaced,

4. “No unification of beliefs can be practically adequate which does not include ethical beliefs as well as scientific [sic.] ones; nor which refuses to count among ethical beliefs, not merely those which have reference to moral commands, but those, also, which make possible moral sentiments, ideals, and aspirations, and which satisfy our ethical needs. Any system, which when worked out to its legitimate issues, fails to effect this object, can afford no permanent habitation for the spirit of man.”

Moral sentiments, ideals, and aspirations are all capable of scientific embodiment in a scientific religion, having the moral as well as the physical needs of man fully in view.

All this contention, however, on Mr. Balfour’s part, leads up to his pet theory that every need of man is bound to receive its “satisfaction” in the universal plan. Starting from the scientist’s need to postulate the ideas of heat, matter, motion, etc., he insists that it is equally legitimate, when working in a region not less real to postulate the existence of a real authority operating in the affairs of the universe—in other words, the existence of a final cause, a rational author!

He says:

“Compare, for example, the central truth of theology—‘There is a God’—with one of the fundamental presuppositions of science (itself a generalised statement of what is given in ordinary judgments of perception), ‘There is an independent material world.’ I am myself disposed to doubt whether so good a case can be made out for accepting the second of these propositions, as can be made out for accepting the first. . . . Consider, for example, this question, ‘What is a material thing?’ Nothing can be plainer till you consider it; nothing can be obscurer when you do.”

Now, most persons would think that although the idea of that objective something which we call “a material thing,” while strictly and scientifically definable, leads, in the last analysis, to not a little ambiguity, the idea of God stands on a somewhat different footing. The latter is not given to us in the form of a percept. It is not ours, conceptually, in the sense of a recognised percept, it is wholly, and solely, a complex and variable product of the imagination which

“Bodies forth the shape of things unknown.”

It is an idea which fills no place, and bears no share, in our conception of the universe, save that indefinite, and wholly visionary, one of *Causa Causarum*. A craving, a need exists, persists Mr. Balfour, for the action of a rational author in the universe. Therefore, the hypothesis that such a being exists is allowable, indeed imperative. In this light, the craving, or need, would be the measure or standard, according to which the existence of God, as infinite cause, may be affirmed—or, it might be added, denied, seeing that, in many ancient faith-systems, no such craving exists. Again, if the craving be an index of a necessary satisfaction awaiting or meeting it, it is clear that the “satisfaction” must bear some natural relationship to the craving—must, as it were, be modelled to suit it—in order to be any satisfaction at all. But men’s conceptions

of, and cravings after, the theistic have been as multitudinous as the subjects of these experiences. God, therefore, would not be the One, but the Many, in the sense of the infinitely varying. Instead of man being made in God's own image, God would be, literally, made after the fashion, whim, or fancy, of each individual man. The criterion is wholly unallowable. Given a craving for personal, individual immortality. Does this alone guarantee such an existence beyond the grave and fate of death? And if not, why not?

THE CHRISTIAN CREED.

The surprise of the informed and thoughtful reader will be considerable on finding that Mr. Balfour, on the strength of premises so scanty as those already mentioned, boldly makes a *salto mortale*, at this stage, from his hypothetical *Causa Causarum* to the deity of Christianity! It is true, that he does not, at first, identify the two—speaking, as he does, of the inspiration of the “one reality,” in broad and general terms. But he soon becomes more definitely anthropomorphic in his theism. “The evidences of God's material power,” he says, “lie about us on every side.” But “the evidences of His moral interest have to be anxiously extracted, grain by grain, through the speculative analysis of our moral nature.” As, however, mankind are not given to speculative analysis, “I know not,” he says, how this end [the grasping of this transcendent truth] “could be more completely attained than by the Christian doctrine of the incarnation.”

This is, indeed, a transition for which the logical reader is scarcely prepared, on such short notice. The *hiatus* in question has not escaped the notice of his reviewers, even of those otherwise favorably disposed towards his views. One of these writes as follows on this point:

“The world, says Mr. Balfour, is an absurdity without creation and guidance. Very well, infer creation and guidance. More than this, we have no authority to claim. And then, in a moment, we suddenly come upon Mr. Balfour speaking of ‘a living God’! Who is hypostatizing the abstract now? . . . God, by the hypothesis, is a causative and a guiding principle, and there is no possible right to attribute one shred more of meaning to the conception than what is supplied by the method of its deduction. Is it needful to discuss the value of this result? Such a God is worthless and unmeaning: the result is as jejune as the process is illegitimate.”¹

To all of which we very heartily say Amen!

We may admire Mr. Balfour's adroitness, his wealth of illustration, and brilliant style, but we cannot say that we admire, or agree with, his logic. His final conclusions are not contained in the premises with which he starts. Even his orthodox friends despair of his methods.

Personally, we do not believe that the volume will bring satisfaction of mind to any earnest and unprejudiced seeker after truth. It will, rather, serve to repel those who might otherwise be attracted to Christianity, by its forced assumptions and question-begging arguments. On the other hand, he must be a faint-hearted believer who is in any way strengthened in the faith by its perusal. A demonstration, which, at its best, only reaches the idea of a possible guiding and sustaining *power* in the universe, and, that issue hypothetically established, jumps at once to the further conclusion that this “power” is no other than the deity revealed in the Old and New Testament Scriptures, may command the assent of the unthinking, but will be powerless to convince any one else.

One of our author's most indulgent critics, Mr. W. T. Stead,¹ remarks that Mr. Balfour employs the method of David Hume to support the conclusions of John Knox. We can only speculate what Mr. Balfour's illustrious compatriots would have thought of the result.

EDUCATION.

BY THOS. C. LAWS.

IT SEEMS to be forgotten in most discussions upon educational questions that the person to be educated is at least of equal importance to the knowledge to be imparted. In all education, whether it be literary or scientific, moral or æsthetic, general or technical, our first inquiry should always be, what sort of pupil is the one to be trained? For the differences between pupils are not less great than those between the various forms of knowledge which we are in the habit of teaching. Much money might have been saved, many tempers might not have been soured, many blows might have been spared, had we been content or capable—for incapacity is at the bottom of much of our inattention—to see to what kind of study our charge was adapted. It is true alike of adults and children that our educational systems will be worthless until we have learned the value of J. S. Mill's sarcastic remark, that education is a machine for making people think alike, and acknowledge that liberty in education has a value as great as in politics and theology. A musical training to one who has no “ear” for music is absurd upon the face of it, and when, as too frequently happens in the case of children, that training is made strictly compulsory, and shirking it is severely punished, that absurdity becomes a matter of cruelty. Not only is the child compelled to try to make himself competent in a study in which he can never become competent, but there is laid before him a great temptation to come to look upon all education as a nuisance and a waste of time, and, smarting under a punish-

¹ Mr. Balfour's *Philosophy*. By G. W. Steevens, in the *New Review* for March,

¹ In the *Review of Reviews* for March,

ment given for "faults" which are not wholly his, but which have been inherited by him from his parents, to react against his training to an extent which no amount of compulsion will ever overcome and to associate obedience and filial respect with pain and punishment and wrongs committed against himself. It may be said generally that wherever a person is really capable of taking any sufficient and satisfactory interest in a subject, he will do so spontaneously and without coercion or extraneous prompting. It should be, therefore, one of the most important duties of parents and guardians to study carefully those committed to their charge, and to make education a rational continuation of the work which nature herself has begun. Individuality, diversity of thought and feeling, of sentiment and research, is one of the greatest charms of social life, and a necessity for the right appreciation of the many-sided universe in which we have our being. Civilised life is so complex, its divisions so numerous, the facts included therein of such vast number and variety, that no one person can expect to fill all positions, nor to master all the available facts. It should be the duty of the true educationalist to watch carefully the unfoldings of each human mind, and to do somewhat towards helping its possessor to take his appointed place in the universe into which he has been born.

Not that I for one moment encourage the creation of a nation of specialists. In most matters it may justly be said that the specialist sees but one side of a question—his own—and that he judges all questions by his own particular art or science. But what I do intend to imply is that as no two persons are born into the world equally gifted in body and mind, we should endeavor, in our systems of education, to temper the wind to the shorn lamb. Greater play should be allowed to spontaneity on the part of the pupil, compulsion as far as possible should be avoided, and far less punishment should be meted out to children because they fail to come up to a given standard in a given subject. Every man is not a born linguist, nor a born scientist, a mathematician, a musician, nor an artist, but where such gifts exhibit themselves, they should be fostered, trained in the way that they should go, developed in such wise that they may be of the greatest value to the individual when he will have to earn his own living, fill a certain position in society, and exercise definite functions in the state. To one who has no taste for languages it will be mere waste time to teach the varying intricacies of the French irregular verbs, for the little he learns of them he will speedily forget. He will not travel abroad, save with personally conducted parties; will prefer home trade to foreign, or if otherwise, will find at a sufficiently small cost, in all our great commercial cities, professional

translators and corresponding clerks ready to make up for his shortcomings. To such a one the literature of his own country is sufficiently vast and excellent to occupy all his attention, while most foreign works of any note are procurable in his own language, in translations which usually represent the original with a fair amount of accuracy. And he who has the gift of tongues will find opportunities for displaying it, even though his parents, as too frequently happens, should so far have ignored his talents and his predilections as to have started him in a course utterly unsuited to his capacities.

Nevertheless, while these talents should be discovered and trained, it is necessary to give a general knowledge to every individual, and this knowledge should be such as will be of the greatest value to him in after life, whether destined for profit, for citizenship, or for recreation and pleasure. Although it cannot be said that knowledge in itself is a benefit to anyone, yet it becomes advantageous when it can be put to a good purpose, either for the well-being of the individual or of society at large. All education is directed either towards physical, mental, or moral discipline, or the accumulation of facts. And here let it be said that physical education is as truly a part of a sound education as is the learning of facts, or the discipline of the mind. When we reflect that the object of life is to live, and to live as long and as happily as may be with the least possible trouble to, or interference with or by those around us, we shall see at once the value of a good physical training. For on the health of the body depends the well-being of the mind. To discipline our minds, too, is a lesson which most of us need to learn. How few, indeed, do we see capable of arguing a disputed point without calling up memories of Smithfield and the Tower. Controversialists, whose sole object should be the search for the truth, are ever eager for victory, and it is not upon rare occasions that their zeal overcomes their discretion. Moreover, we must remember that the next generation depends for its whole being upon this, and that unless we learn to discipline aright our own minds we shall find it no easy task to understand those of another generation and to train them right. But, undoubtedly, the most important form of discipline is moral training. And this is precisely the most difficult to give. Children have been variously likened to savages and young criminals, of whose natures they largely partake, and how many children are there who have to repeat the complaint of David Holst in Jonas Lie's celebrated novel *Den Fremsynte*, that "father was a hard man, who far too little could understand children"? Much will doubtless be improved in the future by the alienological study of the evolution of the mind, and the contouring of its various functions

in its different stages of development. But we must not forget that for the imparting of moral discipline there is necessary not only the reasoning faculty, but also a wide sympathy, an implacable evenness of temper, and an intimate knowledge of child-nature. Little service is done by imparting this form of education in the shape of aphorisms and injunctions, but as far as possible every infringement of a moral rule should bring about its natural punishment. The child who dawdles when his parent or nurse is prepared to take him for a walk should be left behind. Instead of lecturing a child at length for wasting his money, further gifts should be suspended for a season. To Luther the mind of the child resembled a sheet of white paper, upon which one can write what one chooses. On the contrary, it might rather be likened to a piece of newspaper, or a sheet upon which much has already been written, which must be effaced. Lying, cruelty, and vanity are far more common among children than among normal adults. Their impulsiveness is as a rule greater, and their power of distinguishing right from wrong less, and it is usually limited to the difference between parental pleasure and displeasure, more particularly if the child receive practical evidences thereof. It should, therefore, be the duty of those upon whom the duty of training the rising generation falls, to do their utmost to create or evolve a conscience, and that one of the highest rectitude. To effect this it is necessary that right doing should be so enforced that it becomes, as it were, part of the constitution of the child, so that moral acts may be performed by habit or reflex action, spontaneously, instantaneously, and automatically, while the difficulty of doing immoral ones is made correspondingly greater.

Of knowledge other than of a purely disciplinary character it may be said that it should be primarily directed towards making the child his own observer, investigator, and thinker upon matters which require thought and research. He should be taught never to rely upon work done by others, which can be equally done by himself. He should not take statements upon trust, but should prove them for himself. It is better for him to work out the interest on a sum of money at a given percentage than to find it in an interest-table. In learning languages he should not be permitted to use the dictionary except when absolutely necessary. Such training should be given for the most part by ear, and as part of his daily life. If he be of scientific tastes he should be taught to make his own electric batteries, his own cameras, and his own collections, to mount his own objects, and he might be worse employed than in binding his own books. Few things can be worse combated than habits of chronic laziness, acquired by too great dependence upon others,

and leading ultimately to mischief, unruliness, and perhaps even crime.

It is the opinion of some that a scientific education should be paramount, and that little attention should be paid to literature and the arts. That such is not the theory put forward here scarcely needs emphasizing. As moral training, many of our great literary works can scarcely be excelled, and their lessons are taught in an English which has become classic, and in a style which has won the admiration of all lovers of our native tongue. Why, indeed, should we boycott old Sir Roger de Coverley because Vauxhall Gardens were not lit with the electric light, or sneer at the rugged prophet of Chelsea, because his economics were sometimes unsound? Nor must we forget that many men have united literature and science. We may recall the names of Bacon and Goethe, Flammarion and Lewes, and few men have done so much to advance the English language in all its manly force and vigor as Professor Huxley and the late Professor Tyndall. There seems to me no adequate reason why the two forms of learning should not be associated together. For exactitude of observation and impartiality of thought, a scientific training is almost a necessity, whereas for extension of sympathy, for keeping alive the sentimental, æsthetic, and altruistic feelings, science must yield place to literature. The statistician might furnish us with a complete list of all the killed and wounded, the thefts, rogueries, and blunders of any great war summed up with exactitude in dollars and cents, yet he would fail to excite our detestation of the "human beast" as a man of war to anything like the same degree as Zola by his novel *La Débâcle*, or Vassilovitch by a few strokes of his brush. There is always, no doubt, a danger that a literary education may degenerate into mere book-learning. A member of a certain university once told me that there the Latin and Greek languages were not learned that the students might read their literatures. The theoretical rules of grammar were simply taught over and over again, and upon them the degrees were practically obtained. On the other hand, a purely scientific education tends to produce callousness and to lead to the conclusion that every problem in nature is to be solved by the telescope, the microscope, the dissecting-knife, or the process of electrolysis. The combination of the two, however, should unite the advantages of both, and neutralise their disadvantages.

When I speak of literary education, I mean more especially the acquisition of a knowledge of the literatures of to-day. The Roman, Hellenic, and Hebrew literatures may be interesting to some, but neither they nor the languages in which they are written, are of utility to the many. One may, therefore, safely leave them to the consideration of specialists, and fill

up their places in modern education by such languages as French, German, and Italian, to which may be added, for commercial and political purposes, Spanish, Russian, and Japanese. In any case, however, it is advisable to teach a dead language through its nearest living representative, to lead the student in a natural way from one in which all things are familiar, gradually back into another in which everything is unfamiliar. Modern Italian and the old Italian literature are the best stepping-stones to Latin, just as Saxon can be most easily learned by one who is conversant not only with modern English and German, but also with Middle English literature, to which may with advantage be added the existing dialects of Yorkshire and Somerset. It must always be borne in mind that a dead language differs essentially from a living one in a most important point, that, whereas the modern can and should be taught mainly by the ear, the ancient can be taught only by its literature. And this introduces us to another reason for combining literature with science. Science is learned chiefly by the eye. A scientific training is pre-eminently a training in accurate ocular observation. A literary education is imparted largely by the tongue and ear, and thus helps to train into correct use and into rapidity and accuracy of observation other organs with which the imparting of science has little concern. From the thesis laid down in the opening paragraphs and from what has since been said, it is evident that the relative value of an educational system depends little or not at all upon the examinations which may be passed under it, but rather upon the more adequate play which it gives to all the senses and to all the functions of the mind. Under the current system the senses are represented by sight alone, and the mental faculties by an overtaxed memory.

[TO BE CONCLUDED.]

BOOK NOTICES.

Ernst Schröder of Karlsruhe, publishes in the *Mathematische Annalen* an abstruse *Note on the Algebra of the Binary Relative* (Leipsic: B. G. Teubner).

The Sunset Club of Chicago, an institution organized several years ago "to foster rational good fellowship and tolerant discussion among business men of all classes," has just published its *Year Book* for 1893-1894. The *Year Book* contains full reports of the fortnightly meetings and discussions, addresses, etc., and constitutes upon the whole an entertaining volume, from which much information regarding burning questions of the day may be drawn.

The Anthropological Society of Washington publishes, under the title of *The Earth the Home of Man* a part of a very interesting course of lectures prepared for them by Mr. W. G. McGee. Mr. McGee has summarised in a pleasant form, not unmingled with new ideas and a suggestive mode of interpretation, the main results of anthropological research as affecting our physical and intellectual status. The little pamphlet will well repay reading.

We have also received, as extracts from the Proceedings of the Rochester Academy of Science Vol. 2, two little tracts by Dr. M. A. Veeder of Lyons, N. Y., one of which treats of the difficult problem of thunderstorms as connected with auroras, where the author finds that auroras and their attendant magnetic storms occur when spots or faculae, or both, are at the sun's eastern limb, and near the plane of the earth's orbit; and the second of solar electrical energy, which the author contends is not transmitted by radiation, but is to be explained by principles of conduction as they appear under the conditions existing in interplanetary space.

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