

"vague instinct," but he forgets that before the days of Aristotle the strictest syllogistic reasoning was vague instinct in everybody's mind, that it is so now in the minds of all but a very few, and that it is so even in their minds in all but a very few hours of their existence. Another "curiosity of literature" Mr. Stock furnishes when he argues, under fallacies, that it is wrong to ask your opponent to grant the point under dispute, because it is violating "the first of the general rules of syllogism, inasmuch as a conclusion is derived from a single premise, to wit, itself."

But the most original part of the book is the treatment of immediate inference as applied to compound propositions, and this, unfortunately, is almost wholly erroneous. In the first place, the treatment is totally inadequate on account of the fact that it applies only to singular propositions. The denial of "No kings are tyrants" is "Some kings are tyrants," not "All kings are tyrants." "If all men are gentle, all women are brave" is the same thing as "If any women are not brave, some men are not gentle," but it is far from being the same thing as "If no women are brave, no men are gentle." But even for singular propositions, in which "The sun shines" and "The sun does not shine," for instance, contradict each other, Mr. Stock is still chock-full of error. His mistakes are due to two causes—to his ignorance of the fact that particular propositions necessarily imply the existence, real or logical, of their terms, and to his ignorance of the fact, admirably set forth by the late Prof. O. H. Mitchell, in the 'Studies in Logic,' that propositions in two dimensions are necessarily six and not four in number. The reason for this latter fact is, that "All rivers are sometimes dry" may mean either that there are times when every river is dry, or that every river is dry at one time, or another; and that reasoning cannot proceed with safety until it is known which of these two things is meant. We shall not take time to set forth the effects of these two fundamental errors. It is sufficient to point out that no one but a hardened logician would suppose the statement, "Either operators must be careful, or telegrams will sometimes not be correct," to be the same thing as "Either telegrams are correct, or operators are sometimes not careful"; nor would he suppose that in order to deny the statement, "Either men fight, or tyrants reign," we say "Either men fight, or tyrants do sometimes not reign." It gives one a distinct feeling of dizziness, if not of nausea, to be told that these two statements are the denials of each other. To refute him who says, "Either corruption ceased, or the country went to the dogs," it would be necessary to establish *both* that corruption did not cease *and* that the country did not go to the dogs. It happens that statements in *either or* and in *if* are abbreviated forms for *universal* sequences, and that it is impossible to express with those words the particular sequences which are necessary for denying them. All this is as plain as daylight to any one who has been trained in Symbolic Logic, as well as to any one who has not studied Logic at all.

If this author showed greater strength than he does in plain questions of Logic, more interest would attach to the fact, which appears from an advertisement in the end of the book, that he attributes "importance to spiritualism, and gives a degree of credit to its phenomena." There is an admirable collection of examples.

50 (27 February 1890) 184

The Science of Metrology; or Natural Weights and Measures. A Challenge to the Metric System.

By the Hon. E. Noel, Captain Rifle Brigade. London: Edward Stanford. 1889.

CSP, identification: MS 1365. See also: Burks, *Bibliography*. This piece is unassigned in Haskell's *Index to The Nation*, vol. 1.

The metric system is now supposed to be taught in the arithmetic course in every school. If it were well taught—say, if a quarter of an hour twice a week for half a school year were intelligently devoted to it—the pupils would for ever after be more familiar with millimetres, centimetres, metres, and kilometres, with grammes and kilogrammes, with ares and hectares, and with litres, than they are ever likely to be with the English units. Who, except an occasional grocer, can guess at a pound within two ounces; or how many, besides engineers and carpenters, can distinguish seven-eighths of an inch from an inch at sight? Yet these are things easily taught. But schools will gradually get better conducted, and foreign intercourse seems destined before very long to receive an almost sudden augmentation; so that the metric system will pretty certainly become more and more familiar, and there may be expected to be some practical movement towards its use in trade. It is quite within the bounds of possibility that, even in a country with as little governmental initiative as ours, fashion may lead to the partial superseding of the old weights and measures, just as the avoirdupois pound superseded the Troy and merchants' pounds, as ells and nails have given place to yards and inches, as lasts and stones, firlots, kilderkins, long tons, great hundreds, and innumerable other units have disappeared within this century. If the litre, the half-kilo, and the metre were only not all severally greater than the quart, the pound, and the yard, there might be shops to-day where the keepers would affect to be unacquainted with English weights and measures.

There is little real difficulty in changing units of weight and bulk, were there any positive motive for it, for the things they weigh and measure are mostly used up within a twelvemonth. But with linear and square measure it is otherwise. The whole country having been measured and parcelled in quarter sections, acres, and house-lots, it would be most inconvenient to change the numerical measures of the pieces. Then we have to consider the immense treasures of machinery with which the country is filled, every piece of which is liable to break or wear out, and must be replaced by another of the same gauge almost to a thousandth of an inch. Every measure in all this apparatus, every diameter of a roll or wheel, every bearing, every screw-thread, is some multiple or aliquot part of an English inch, and this must hold that inch with us, at least until the Socialists, in the course of another century or two, shall, perhaps, have given us a strong-handed government.

We can thus make a reasonable prognosis of our metrological destinies. The metric system must make considerable advances, but it cannot entirely supplant

the old units. These things being so, to "challenge" the metric system is like challenging the rising tide. Nothing more futile can well be proposed, unless it be a change in the length of the inch. Nevertheless, there is a goodly company of writers to keep the Hon. Capt. Noel in countenance in conjoining these two sapient projects. None of these gentlemen supports the constructive parts of the other's propositions; but they are unanimous against the metric system and the existing inch.

Mr. Noel's system is nearly as complicated and hard to learn as our present one, with which it would be fearfully confused, owing to its retaining the old names of measures while altering their ratios. Thus we should have to learn that $2\frac{1}{2}$ feet would make a yard, 4 miles a league, 5 feet a fathom, 625 acres a square mile, 1,953,125 cubic ells a cubic yard, 216 cubic inches a gallon, 24 ounces a pound; etc. But it is not intended that this complication shall last for ever, for this lesson, once digested, is to be followed by a clean sweeping away of the decimal numeration and the substitution of duo-decimals. Mr. Noel enumerates sixty-eight advantages of his proposal, among them the following: "Mile, one-quarter hour's walk, better than kilometre"; "cubic foot worthier base than cubic decimetre"; "old London mile restored." The scheme is not without merit, and might have been useful to Edward I. Even at this day it must at least have afforded some agreeable occupation to its ingenious and noble author, not to speak of the arithmetical practice.

50 (27 March 1890) 265

Epitome of the Synthetic Philosophy.

By F. Howard Collins. With a preface by Herbert Spencer. D. Appleton & Co. 1889.

CSP, identification: MS 1365. See also: Burks, *Bibliography*. This note is unassigned in Haskell's *Index to The Nation*, vol. 1.

A more admirably executed second-hand synopsis of a system of philosophy never was. Considered simply as an index to Spencer's systematic works, this 'Epitome' is invaluable; and to persons who read and reread those thick volumes, not because they believe in them, but only because they want to know what it is that so many others believe, and to whom the writings of the dreariest scholastic doctor are less heartbreakingly tedious, this one volume of 500 pages in place of a library of 5,000 pages is like balm of Gilead. Would it only embraced an introduction boiling the whole thing down to 50 pages! It is printed uniformly with Spencer's works, upon agreeable paper with clear type, and published by the same eminent firm which, by the dissemination of those writings, has contributed so much to the culture and thought of our people.

50 (19 June 1890) 492-493

RIBOT'S PSYCHOLOGY OF ATTENTION

The Psychology of Attention.

By Th. Ribot. Authorized translation. Chicago: The Open Court Publishing Company. 1890. 8vo, pp. 121.

CSP, identification: MS 1365; Haskell, *Index to The Nation*. See also: Burks, *Bibliography*; *List of Articles*.

Every educated man wants to know something of the new psychology. Those who have still to make acquaintance with it may well begin with Ribot's little book on 'Attention,' which all who have made progress in the new science will certainly wish to read. It is the *chef d'œuvre* of one of the best of those students who have at length erected psychology into a science.

Ribot regards the doctrine of attention as "the counterpart, the necessary complement, of the theory of association." He means that attention is related to suggestion as inhibition to muscular contraction. Physiologists, however, would scarcely rank *inhibibility* with contractility as an elementary property of protoplasm. Besides, though suggestion by association may be likened to muscular action, how can the analogy be extended to the process of association itself, or the welding together of feelings? This welding seems to be the only law of mental action; and upon it suggestion and inhibition of suggestion alike depend. Attention is said by Ribot to modify reverie's train of thought by inhibiting certain suggestions, and thereby diverting their energy to suggestions not inhibited. This makes the positive element of attention quite secondary. At the same time, we are told that the sole incitement to attention is interest. That is to say, a preconceived desire prepares us to seize promptly any occasion for satisfying it. A child's cry, drowned in clatter of talk for others' ears, attracts the mother's attention because she is in some state of preparation for it. Ribot, however, does not remark that to say the mind acts in a prepared way is simply to say it acts from a formed association, such action not being inhibitory. If interest be the sole incitement to attention, it is that the energy spent upon the interesting suggestion leaves none for others, rather than that a positive inhibition of the latter throws waste energy into the former. This only happens when attention is controlled for a conscious purpose. If, in the beginning of his inquiry, Ribot had discarded the unscientific word "attention," and with it his feeble antithesis of association and attention, the truth would have shone out that the main phenomenon is emotional association, aided in certain cases by acts of inhibition.

The most interesting and valuable parts of the book are those devoted to corporeal concomitants of attention. Evidence is that in this act parts of the brain receive increase of blood. This must be due to stimulation of the vaso-motor nerves, belonging to the sympathetic system, under the influence of the desire in the interest of which attention is excited. Moreover, in intense attention the breath is held, and in every case respiration is slackened. There are, besides, certain muscular actions: in external attention, the eyebrows and the skin of the forehead over them are drawn up, the eyes opened wide and directed to the