at the points on a scale opposite the height of each parent, and read on another scale the most probable height of son and daughter, as well as the range of variation within and outside of which there is an even chance of his or her appearance.

At first sight, this law seems opposed to the current conceptions of heredity, by which like breeds like, and qualities gather strength as they are handed down from parent to child; but, while the tendencies of the two laws are opposed, this opposition is not a contradiction. There is still room for the appearance of qualities in families, because the exceptional father is still more likely than the mediocre one to have an exceptional son; only the chances are not in favor of having a son equally as exceptional as he himself is. This is true because the rate of regression towards the mean is a ratio, and affects all alike. However, owing to the far greater number of mediocre parents, it is more likely in a given case that an exceptional son is the exceptional child of "average" parents than the "average" of exceptional parents. The law tells heavily against the continued inheritance of particular traits, both beneficial and pernicious ones, and regards as typical the oft-observed decadence of eminent families.

The variations in eye-color, the presence or absence of the artistic temperament, — which is shown to be more prevalent in women than in men, — the tendency towards types of disease, are treated according to the same plan, and the assumption of the validity of the law is found to accord with the facts. Mr. Galton has even attempted an experimental verification. The seeds of sweet-peas differing in size were grown, and the numbers of resulting seeds of each size were obtained, with the result that the seeds were less exceptional in size than the parent-seeds, and also in about the ratio of one-third.

Besides this chief result, the volume contains a number of minor studies, all of which will be of interest to students in various scientific pursuits. The effect of marriage selection in continuing individual traits; the distinction between traits that blend, such as the mulatto issue of black and white, and those that do not blend but exist side by side; the possible shifting of the average result by a general amelioration of the race; the means of defining quantitatively nearness of kinship, — these form some of the minor points discussed.

In leaving the volume, one is impressed with the great value of method in statistical work, with the power of mathematical treatment to give clearness to results, with the enormous labor necessary to obtain results in this definite form, and with the great possibilities that this study holds out to our posterity as a means of racial and social improvement.

AMONG THE PUBLISHERS.

E. & F. N. SPON announce "A Practical Treatise on the Strength of Materials, including their Elasticity and Resistance to Impact," by Thomas Box; "Steam Boilers, their Management and Working on Land and Sea, Thirty Years' Experience," by James Peattie; and "The Voltaic Accumulator, an Elementary Treatise," by Emile Reynier, translated from the French by J. A. Berly, C.E

Shall We Teach Geology?

PERHAPS Professor Winchell and his reviewer have said as much as is profitable on the points at issue between them, and yet I for one should feel sorry to have the discussion end precisely as "Reviewer" leaves it. We all gladly admit that the Roman Empire is a more interesting object of study than the "old red sandstone;" but how if a study of the "old red sandstone" helps us to understand the Roman Empire, in the first place by giving us a superior method of study, and then by teaching us something about the theatre upon which the Roman and other empires played their parts? And especially how if one is teaching children to whom the Roman Empire is very distant and very dead, while the "old red sandstone" crops out just before the schoolhouse door, and is so attractive and interesting to them that they often ask questions about it? Unquestionably, our national hero, when properly brought before the mind, is a more gracious figure than a plesiosaurus; and yet it is very easy to teach American history in such a way that one form shall seem to the children about as rigid and unstimulating as the other. If a plesiosaurus is just being exhumed in the neighborhood (it is proposed to teach children only the near and the attractive in nature), I am not sure but he will prove, for a few days at least, the more interesting object.

It seems to me that "Reviewer" is afraid of a word. Suppose we say nothing about geology, but simply give the children an opportunity, at proper times and in due measure, to vary their studies by some minute and careful examination of minerals, plants, and animals. Such study need take but little time, but, if properly directed, may be very valuable; may, indeed, exert a transforming influence over those who are subjected to it, giving them new aptitudes, new sensibilities, and a finer organization. Is this too much to ask? Have not twenty-five years of discussion brought us at least as far as this?

What is demanded is not the introduction of a new subject of study into an already crowded curriculum, but an organized course of nature-study running through the whole period of school-life. The particular objects of study are not so important, but plants and minerals will naturally form in the lower schools the main part of this material. The point is, that the instruction should be continuous enough and yet fresh enough to catch and hold the mind in its varying stages of development from youth to manhood. Good collegiate must be grounded upon good preparatory work. Accepting "Reviewer's" test — that also of Johnson and Arnold — of teaching that which is "interesting to the mass of men," does it bear out his inferences? If so, let us drop this subject altogether, and not cling to the dead form of "geology as an optional study in the high schools and colleges." The ordinary college presents many disheartening sights; but I know of no one more disheartening than to see the members of a senior class who have never taken up a stone except in anger, and never thought of one except as a missile passing from hand to hand,— the *pièces justificatives* of a lecture on geology.

E. A. STRONG.

Ypsilanti, Mich., April 1.

Curves of Literary Style.

IT seems necessary to explain occasionally that in the construction of curves of literary style, concerning which two or three notes have recently appeared in *Science*, a *very large number* of words or sentences must be used. The method is distinctly based on a supposed constancy *in the long-run*. In the original article the statement is made that probably not less than one hundred thousand words or sentences would be required for the construction of a "characteristic curve." If Mr. Parker had counted only thirty sentences from "Sartor Resartus," he might have found a close agreement with the curve of the "French Revolution," or he might have found a wide divergence. In neither case would the result have had any significance. A comparison of three hundred sentences proves nothing, one way or the other.

M.

Terre Haute, Ind., April 1.

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