UNIVERSITY AND EDUCATIONAL NEWS.

MRS. EMILY PRISCILLA EDGELL HUNT has bequeathed £5,000 to King's College School, London, for scholarships to be awarded for proficiency in practical sciences. She also bequeathed £1,000 to the benevolent fund of the Institution of Civil Engineers, and large sums to London hospitals.

SIR WILLIAM FRASER has bequeathed £35,000 and half the residue of his estate to the University of Edinburgh.

THE Edinburgh University Court has appointed to the new professorship of public health and sanitary science at Edinburgh University Dr. Charles Hunter Stewart, who for the past ten years has acted as chief assistant in the bacteriological laboratory connected with the chair of medical jurisprudence and public health in Edinburgh University.

DISCUSSION AND CORRESPONDENCE.

SCIENCE IN THE BUREAU OF EDUCATION.

DOUBTLESS a large number of the readers of SCIENCE have just received the first volume of the Report of the Commissioner of Education for 1896–97, and after remarking on its unusually prompt appearance have put it away unopened, to await some emergency in which its statistics may be useful. It may be desirable to call attention to the fact that this report is distinguished above its fellows by a most remarkable article on 'Recent Contributions of Biology, Sociology and Metallurgy to the Curriculum of Agricultural Colleges.' This forms Chapter 20 of the Report, pp. 923–1080. It is of the biological section that I wish to speak.

Considering that the article deals with 'recent contributions,' it is rather surprising to find the amount of space given to quotations from De Saussure and Liebig. But it is still more surprising to find that the author quotes with approval on p. 945 the statement of the former writer that "plants do not take all their mineral food out of solutions such as those which are artificially made, * * * but they take them for the most part from compounds which we are unable to form, namely, out of such compounds in which these salts are chemically combined with oxygen, hydrogen, nitrogen and carbon in humus extract, a fact that can only be revealed to us by an examination of the ashes of the plant." It would seem that the writer had never heard of water-cultures.

After giving quantitative proof (from de Saussure and Boussingault) of the absorption of CO_2 and the giving-off of O by green leaves, the remark follows, p. 929: "It is quite safe, then, to say that the leaf eats (so to speak) of carbon, and that indirectly it takes this from the air, though it must never be forgotten that the capital function of the leaf is, to use an expression necessitated by our ignorance, 'to elaborate' the sap. Why the leaf should act thus through a green substance it contains called chlorophyll has engaged the attention of many, but there is something about the question that stunts the growth of an hypothesis." (!!)

"The root is an apparatus to absorb water. It is composed of three parts; a cap or penetrating point, a muff of fine hairs which follows close behind the cap, and finally an arm or the body proper of the root, which is at once an anchor, an alimentary canal and a pump." (p. 931.)

Apparently the Jews of the Education Bureau have no dealings with the Samaritans of the Department of Agriculture, or the writer would hardly have said that agrostology is the Gallic name for soil physics. And he might have found a zoologist to tell him that 'the substance resembling cellulose called tunicine' is not so called 'from its being found only in the mantle which covers the body of oysters and other mollusks.' He might also have been shown a specimen of growing yeast, and one of *Protococcus*, which would have kept him from evolving the 'diagrammatic sketches' of these plants on p. 971.

It is impossible to do justice to this writer without longer citations than SCIENCE probably can afford space for. I will simply mention some of the most striking passages. There is some fine confused reading in the account of the nitrogen question, on pp. 929–940, though Schloesing and Müntz, Hellriegel and Wilfarth, are quoted in some detail. The gem of the chapter is, however, the section on the life-process and instinct of the plant, and particularly the subsection on the 'development of the male cell (*i. e.*, pollen-grain) in the ovary,' from which it appears that "antecedent to the fecun-

dation there is a microbous growth which sets up interior disarrangements, * * * which eventually result after fecundation in the formation of a miniature plant. The strange thing about the matter is that the little plant may, when grown up, turn out to be greatly different from either the plant from which the pollen drifted or from the plant which caught and nourished the pollen on its stigma and then received the 'being' of the pollen in its ovary." The question of the ascent of water in plants is attacked, and the author seems sceptical about the existence of root-pressure and transpiration, while the famous spiral tendency is revived in connection with the ascent of sap and phyllotaxy. Evolution, natural selection and spontaneous generation are mentioned in a way that shows that there are still dark places into which correct notions of these phrases have not penetrated. As has been indicated, quotations from good authors are interspersed, but the result is rather like that which follows a mixture of ice cream and lobster salad.

It is hard to say what object this article can be conceived to serve. The distinguished metaphysician who has been the efficient head of the bureau so long, and may he long remain there, might perhaps be able to give an answer from the depths of his philosophic lore. No plain man can. Fortunately from the method of its publication, the indigestible mass of actinic rays, earthworms, Rothamsted experiments and circumnutation—in addition to the constituents already mentioned — cannot do much harm except to the naïve folks who think that government reports are a sort of gospel.

Seriously, although scientific men are becoming accustomed to the notion that pedagogical 'experts' have a plenary inspiration which gives them the right to discuss all subjects under the sun without studying them; and although they may simply smile when a psychologist speaks of the legs of a hydra, and opposes the sarcolemma to the germ-plasm, or attributes the upward growth of a stem to heliotropism, if he has something to say that compensates for the blunders; yet it does seem that these people might at least take the trouble to submit their manuscript to some *Fachmann* before publication. And the Bureau of Education might do well to investigate the training of its 'specialists' a little before employing them to write up scientific subjects.

University of Colorado. John Gardiner.

THE PSYCHOLOGY OF SUGGESTION.

To the Editor of Science: Permit me to make a few remarks in regard to the review of my book, 'The Psychology of Suggestion' by Professor Wm. Romaine Newbold in Science for June 24, 1898.

Professor Newbold contends against the truth of my second law, that of abnormal suggestibility. He brings the phenomena of *rapport*. "In states of heightened suggestibility," he writes, "suggestibility to suggestion has no significant relation to the mode in which the suggestion is administered, but rather to the *source whence it comes.*" (The italics are his own.) "Rapport," he says further on, "although not an inevitable, is perhaps one of the most constant traits of heightened suggestibility, and this Dr. Sidis' second law ignores." Now this is not true. *Rapport* is not a characteristic spontaneous trait of the advanced stages of hypnosis, it is itself due to a suggestion forced on the subconsciousness of the subject. Where the personal element is considered important, there the phenomena of *rapport* will naturally be frequent. Where, however, it is realized that hypnosis has little to do with the personality of the experimenter, *rapport* is *absolutely* absent even in the very last stages of hypnosis. Thus in none of my best subjects have I found the phenomena of *rapport*. *Rapport* had to be specially induced by most emphatic suggestions. This is simply due to the fact that in my experiments I have taken precaution to guard against all unconscious suggestions in general, and particularly against the 'personality suggestion.' The importance of the personal element, 'the source' in hypnosis is a widely spread, but an unjustified belief due, no doubt, to some lingering remnants of mesmeric theories. As a matter of fact, *rapport* is not spontaneous in hypnosis, it is induced by suggestion, and, like all other suggestions, depends on the conditions and laws of suggestibility.

Professor Newbold finds fault with my preliminary definition of suggestibility. I won-