author, and whichever way I grab up the box—front or back. It is so long since I have had any of these boxes made that I do not remember the cost and, of course, that would vary with the locality and material. The boxes I have are made of good grade pasteboard, about 3/32 inch thick, covered at back and joints with black cloth. The only objection to such open boxes is dust, but if they are shut into glass-faced, unit-size, extra high, bookcase sections, the glass front lifting to a horizontal position and sliding back over the boxes, the dust difficulty is not great. Tiers of these, one above the other, enable one to see at a glance all his separates on a given subject. The units I have are about 12 inches deep, 15 inches high and each one will hold 9 of these boxes. They are known as book-case sections, outside dimensions 33 inches wide, 13 inches deep and 16¾ inches high, fitted with disappearing glass panel door with non-binding device, and were purchased from the Globe-Wernicke Co.

ERWIN F. SMITH

GERMAN SCIENTIFIC MEN AND RESEARCH

IN these sad times of political and economic depression in Germany, it is worth while to note the interest that is still maintained in research among the German scientists. The writer attended the third annual congress of the *Deutsche Gesellschaft für Vererbungswissenschaft* which met in Munich from September 24 to 27 of the present year. The meetings, which were held in the anatomical institute of the university, were presided over by Richard von Hertwig and were attended by three hundred scientists. The program was divided into three sections for the reading of papers—the botanical papers coming on Monday, the zoological on Tuesday, and the anthropological on Wednesday. For Thursday, an excursion was planned into the Tyrol.

More important to the writer than the papers read was the fact that, in such times as these, university professors were willing to spend from their salaries (about two hundred and fifty dollars a year) a sum equal to one or two weeks' income, and this at a time when the railroad fares were to be increased two and a half times before their return home. The excursion into the Tyrol was announced as fourth class on the railroad and most of those present had traveled fourth class to Munich. Black bread without butter at home, board seats on the railroad, but genetics at Munich! About one fourth of those in attendance were women, and women took part in the discussion. Among those present were such well known men as Hertwig and Goebel, of Munich; Spemann, of Freiburg; Lehmann, of Tübingen; Oehlkers, of Heidelberg; Kniep, of Würzburg; Renner, of Jena; Winkler, of Hamburg; Goldschmidt and the younger von Wettstein, of Dahlem; Buder, of Griefswald, and the elder von Wettstein, of Vienna.

F. C. NEWCOMBE

STUTTGART, GERMANY

QUOTATIONS

MINERVALS

A CONTRIBUTOR to the current number of SCIENCE named Welsh, writing from Nirvana (not the state of beatific freedom from earthly ills, but Nirvana in the State of Pennsylvania), makes reply to an earlier contributor, Professor Preston Slosson, in the matter of the meager salary of Professor Blank as compared with the income of John Smith, merchant. Professor Slosson, as protagonist for Professor Blank, shows that his client's salary can never be more than $4,500 at 60, at which age he is retired on half pay—that is, less than $2,500; while John Smith, merchant, starting at 15 years of age as an office boy at a salary which Professor Blank does not have until he is 25, is at 60 enjoying profits of $25,000 a year as a retired stockholder, or ten times the income of Professor Blank. He holds that Professor Blank's salary ought to be at least $8,000 or $10,000. Otherwise the business world can always outbid the college for the services of able men. He contends that the leisure of the college man (which is supposed to justify a smaller money stipend) is a myth, and that while the pleasantness of his occupation is undeniable, if salaries were cut down on that account some of the wealthiest men should have a like cut, since they are "hardly happy" away from their offices and would enjoy a Latin professorship even less than a Latin professor would enjoy a seat in the Stock Exchange.

Moreover, while business has its millionaires, education has none. Its "minervals" are reckoned in thousands at most. Even the authors of text-books do not rise to great wealth. The economic value to society of the research scientist of the highest calibre may be many times that of the ablest banker or railroad president, and yet he may be enjoying but a small fraction of the latter's salary (witness Dr. Steinmetz's insignificant savings of a lifetime). It would be only a fitting recognition to pay these outstanding men of science as much at least as a first-class "realtor."

Comes now Mr. Welsh, of Nirvana, and says that John Smith, merchant, is far beyond the average merchant in his income; that of those who attempt business for themselves 90 per cent. are failures and are forced to drop out with their capital completely used up; that those who succeed are the most severely selected class in the world; that the average professors should be compared not with the successful business man but with his employes, and that they get

"all they are worth to the community." He even goes so far as to assert that few of these "audible books," as he calls them, benefit the community so much as the average clerk, because "their efforts are not directed and coordinated" as are those of the clerks.

Without disparagement of merchant or clerk, it is to be remembered that it is largely by the guidance of those who perform such service as that of Professor Blank that we progress toward the true state of Nirvana on earth. If the real value of these teachers and researchers were estimated by what America would conceivably be without their intangible, spiritual contributions, not to mention what their discoveries have added to life's comfort, convenience, length and strength, their wages would be incalculably augmented. If for "Professor Blank" were written, for example, "Professor Joseph Henry," is there any salary that would be quite adequate to pay civilization's debt to this Albany schoolmaster and Princeton professor? The tinkle of the tiny bell that he first rang by electricity is soon to be heard by radio around the world. But the influence of many a professor is felt as widely. His merchandise is "better than silver." His "minervals," as his wisdom fees were called in ancient times, should, however, be sufficient to permit him to remain where he can give the highest service to the community.—*The New York Times.*

SCIENTIFIC BOOKS

Labyrinth and Equilibrium. Monographs on Experimental Biology. By S. S. MAXWELL. 163 pp., Philadelphia and London: Lippincott, 1923.

IT should be sufficient, for the purposes of most reviews, to be able to say that the book had been written by one who had actually worked at the problems discussed and who had contributed many illuminating facts in a subject which has been obscure since the first pioneer entered the field. I can say this of the volume now under discussion. The author's own work, so lucidly described in the pages of this book, has given us a clearer idea than we have had of the mechanism of stimulation of the afferent nerve endings in the non-auditory portion of the internal ear.

Goltz stated the general problem of the function of the non-auditory or vestibular portion of the internal ear nearly two generations ago. Three things are necessary: (a) The peripheral receptor and the afferent nerve; (b) the central nervous system, and, (c) the efferent nerves, together with their effectors—the skeletal and various other muscles in the case of the present mechanism. The book deals, for the most part, (a) with the relation of the labyrinth to forced or abnormal positions of the organism, and to the compensatory positions which follow the displacement of the animal from its normal position and, (b) with the general mechanism of stimulation of the vestibular endings. These phases of the subject are handled with all the clearness which our present knowledge of the subject permits.

The final chapter is on nystagmus, the pecular ocular movements resulting from vestibular stimulation; the slow movement in one direction, say to the right, and a quick movement in the opposite direction. Nystagmus is due to some mechanism or mechanisms in the central nervous system—the second part of the problem as Goltz formulated it—and it should not be considered as a reflection upon the book to say that here the author's hand is a little less sure. Nor is it to be taken as a sign that the author is wrong when I say that he does not wholly accept some of the opinions of the reviewer. The problem of the functional organization of the nervous system is one of the most complicated and perplexing which the biologist has to face, and no one has yet given a clear and intelligible statement of the organization of the whole mechanism for the performance of any single function, nystagmus included. This should be a sufficient apology for any lack of certainty of conclusions in the author's final chapter.

Although it is not my purpose to review it here, I wish to mention another recent volume on the vestibule, written by a psychologist.[1] Maxwell's volume deals principally with the purely objective side of vestibular stimulation. Griffith deals with the subjective or psychological side of some common vestibular effects. In addition to giving the most complete bibliography of the subject of which I am aware, he has some remarks upon some common opinions of vestibular phenomena upon which neither fact nor argument has as yet made much impression.

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SPECIAL ARTICLES

A NEW PHOTO-ELECTRIC EFFECT

REFLECTION OF ELECTRONS INDUCED BY LIGHT

A STUDY of some vacuum tubes containing caesium vapor has shown a peculiar photo-electric effect. The action of white light on an adsorbed film of caesium on nickel seems to cause this surface to reflect elastically electrons which are made to impinge on it. The number of electrons that can be thus reflected is proportional to the intensity of the light.

Two nickel cylinders, B and C, open at the ends, were mounted end to end along the same axis, being but slightly separated from one another. Inside of

1 Griffith, Coleman R.: "An historical survey of vestibular equilibration," pp. 178. University of Illinois Bulletin, XX, No. 5, 1922.