ginnings of race homicide among the more cultivated members of the race. College professors must be presentable socially and as befits their learned station. They have not the means to rear their families.

If the plight of the professors is evil, that of the assistant professors is worse. Consultation of Bradstreet's tables shows that the cost of living has increased 50 per cent. during the period in which the assistant professor must serve before being promoted. The young men who choose a career in a university must, of course, and gladly do, abandon expectation of riches. But they should be permitted to live, not merely to exist, on a wage that is exceeded by the bricklayer's. After a general and specific investigation Professor Guido H. Marx, of Stanford University, recently reported in SCIENCE that assistant professors have found their salaries inadequate to support them comfortably as celibates, and many are seriously debating whether to resign their positions.

There is something unsound in university administration when the faculties are so ill-paid. Possibly competition with the state universities, which are steadily voting percentage increases of salary to their faculties, will stir the majority of privately endowed institutions to action. But their trustees have been too long asleep.—N. Y. *Times.*

SCIENTIFIC BOOKS

National Antarctic Expedition, 1901–1904. Natural History, Vol. V. London, British Museum, 1910. Seal Embryos, by Dr. H. W. MARRETT-TIMS. 21 pp., 2 pl. Tunicata, by Professor W. A. HERDMAN. 26 pp., 7 pl. Isopoda, by T. V. HODSON. 77 pp., 10 pl. Nemertinea, by Professor L. JOUBIN. 15 pp., 1 pl. Medusæ, by E. T. BROWNE. 62 pp., 7 pl. Lichenes, by Dr. O. V. DARBISHIRE. 11 pp., 1 pl., 4to.

The fifth volume of the reports on the Natural History of Captain Scott's expedition to the Antarctic edited by Mr. Jeffrey Bell has now appeared and the preface states that another volume will probably conclude this series of reports which has contained so much of value and so many additions to our knowledge of the Antarctic region.

The seal embryos all belonged to Weddell's seal and from the data accompanying them it seems that the period of gestation is about nine months, the young being born in October or November. They are covered at birth with a coating of hair which is shed during the first month. After the second coat appears the young seal may take to the water, though it is not weaned until some time later. The vibrissæ precede the body hair in appearance and were distinctly visible in an embryo four inches long. In a very early embryo what is regarded as a trace of an external ear was detected. The examination of the muscular system seemed to lend some additional support to Mivart's suggestion of a Lutrine origin for the Phocidæ.

The collection of Tunicata contained twenty-two species; excluding the pelagic forms there are thirty-three specimens belonging to fourteen species.

The Antarctic tunicate fauna is characterized by the abundance and large size of the individuals of a comparatively few species. Our knowledge of the fauna is still too limited to allow of a critical comparison with that of the Arctic, but a certain similarity of families and genera is noticeable. The strictly Antarctic region, south of latitude 60° S. has already furnished some fifty species of Tunicata, of which Professor Herdman gives a list. Ten new species are described, of which one is probably the largest *Styela* known.

No less than twenty-five species of isopods were captured. Remarkable sexual variation was noted among the Arcturidæ. An interesting feature, first pointed out by Miss Richardson, is the presence of long peduncles supporting the eyes; these have now been observed in seven Antarctic species. Mr. Hodson gives a list of the known isopods of the Antarctic region of which twenty-nine out of one hundred and eleven are strictly Antarctic, seven are also found in the Arctic regions, and the remainder belong to the subantarctic region.

The recent Antarctic explorations have produced a fair number of new Medusæ, many of which have well-marked and interesting specific characters, but there are only about three new genera. Probably, according to Dr. Browne, none of them will remain peculiar to the Antarctic when the ocean has been more thoroughly explored. The littoral Hydromedusæ of the Antarctic have not yet been found in the Magellanic, South Australian and New Zealand areas; it looks as if they belong to an ancient stock which has long been isolated from the rest of the world by the Great Southern Ocean. As evolution is proceeding more slowly in cold than in warm regions, the characters of an Antarctic medusa should be more primitive than those from a warmer sea. Dr. Browne gives comparisons which in a number of cases seem to sustain this view. Some very large scyphomedusæ are reported, including a *Diplulmaris* with arms twelve feet in length.

The lichen material brought back by the expedition included some twenty-five species and there are recorded from the Antarctic continent and closely adjacent islands some eighty-eight lichens. Of these thirty-eight are confined to the region between 60° and 78° south latitude, as far as known. The southern lichens do not present any new genera and occur in small quantities contrasting with the abundance found in the Arctic regions. Four species were found on the peaks of the Antarctic volcanoes, Mts. Erebus and Terror, and of these three are also inhabitants of the Arctic regions. That any indigenous organized object whatever can exist on these gloomy volcanic peaks covered with and rising out of eternal ice and snow, seems almost miraculous!

The plates of this volume are of the usual high quality, and the whole character of the work is such as would be expected from the authorities of the British Museum.

Wm. H. Dall

Catalogue of the Lepidoptera Phatænæ in the British Museum. Vol. IX., Noctuidæ, 1910.

The present volume completes the account of the subfamily Acronyctinæ of the Noctuidæ. It contains 725 species in 185 genera, showing a total for the subfamily of 2,288 species in 385 genera. The volumes of this series are appearing with gratifying rapidity. We have only recently noticed the publication of volume VIII. The present volume is on a par with its predecessors in general plan and execution. The table of genera for the subfamily is again repeated with final additions and corrections and will now become fully available.

Harrison G. Dyar
U. S. National Museum,
Washington, D. C.

Special Articles

On the Spectrum of Mars as Photographed with High Dispersion [1]

Let us recall that the solar spectrum, as viewed by terrestrial observers, is composite. Photospheric light, in passing out through the gases and vapors of the sun's atmosphere, is selectively absorbed, with the result that many thousands of lines are introduced into the spectrum. The transmitted light passes down through the earth's atmosphere to the observer, and the absorption by water vapor and oxygen in the terrestrial atmosphere introduces many hundreds of additional lines, at definite points in the yellow, orange and red regions. The observed spectrum of the sun is in reality the spectrum of the sun plus the spectrum of the earth. The spectrum of the moon, so far as our present problem is concerned, is simply this sun-earth spectrum.

The light from Mars is photospheric light, which passes out through the sun's atmosphere, thence down through the atmosphere of Mars to the planet's crust, where a certain proportion is reflected out through the Martian atmosphere, and thence down through the earth's atmosphere to the observer. The so-called spectrum of Mars is in reality the sun's spectrum plus Mars's spectrum plus the earth's spectrum.[2] Any water vapor and

[1] Read at the April, 1910, meeting of the National Academy of Sciences.

[2] A little of the light would be reflected from the atmospheric strata of various heights without