

temperature. The pelagic larvæ of bottom-living species are always present in the warm surface waters of the tropics, sometimes growing to an enormous size; but they are absent from the cold polar waters and in the deep sea, where the majority of the bottom-living species have a direct development.

The Arctic fauna and flora, both at the surface and at the bottom, resemble the Antarctic fauna and flora, and a large number of identical and closely-related species are recorded from the two polar areas, though quite unknown in the intervening tropical zone.

The boundary line between the deep-sea region and the neritic province is marked out by what has been called the "mud-line," where the minute organic and inorganic particles derived from the land and surface waters find a resting place upon the bottom, or serve as food for enormous numbers of crustacea, which in their turn are the prey of fishes and the higher animals; this mud-line, in fact, appears to be the great feeding-ground in the ocean, and its average depth is about 100 fathoms along the borders of the great ocean basins.

The majority of deep-sea species are mud eaters; some are of gigantic size; some are armed with peculiar tactile, prehensile, and alluring organs; some are totally blind, whilst others have large eyes and are provided with a kind of dark lantern for the emission of phosphorescent light. The deep-sea fauna does not represent the remnants of very ancient faunas, but has rather been the result of migrations from the region of the mud-line in relatively recent geological times.

The *Challenger* investigations show that species are most abundant in the shallow waters near land, decreasing in numbers with increasing depth, and especially with increasing distance from continental land.<sup>1</sup> This is true as a general rule, especially of tropical waters, but in polar regions there are indications of a more abundant fauna in depths of 50 to 150 fathoms than in shallower water under 50 fathoms.<sup>2</sup>

The various points touched upon regarding the distribution of marine organisms, might be explained on the hypothesis that in early geological times there was a nearly uniform high temperature over the whole surface of the globe, and a nearly uniformly distributed fauna and flora; and that with the gradual cooling at the poles, species with pelagic larvæ were killed out or forced to migrate towards the tropics, while the great majority of the species which were able to survive in the polar areas were those inhabiting the mud-line. The uniform physical conditions here referred to might be explained by adopting the views of Blandet<sup>3</sup> as to the greater size and nebulous character of the sun in the earlier ages of the earth's history.

### UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—Dr. J. N. Langley, F.R.S., and Mr. A. C. Seward, Lecturer in Botany, have been appointed additional members of the Degree Committee of the Board for Biology.

Mr. F. F. Blackman, of St. John's College, has been appointed University Lecturer in Botany.

The special numbers of the *University Reporter* containing the Report of the Syndicate on Degrees for Women, and the speeches made in the three days' discussion thereupon in the Senate House, can be obtained (price 7d.) by application to the University Press, Cambridge.

DR. ALEXANDER J. C. SKENE, president of the Medical College of the Long Island College Hospital of Brooklyn, has received the degree of LL.D. from the University of Aberdeen, his native city.

MR. JOHN D. ROCKEFELLER has given 40,000 dollars to Mount Holyoke College, in Massachusetts. This is a college for women, which a few months ago met with heavy loss by the burning of its buildings.

MRS. E. A. STEVENS, widow of the founder of the Stevens Polytechnic Institute, has given to that Institute property valued at 30,000 dollars, since the quarter-century celebration held a few days ago.

<sup>1</sup> See "Challenger Reports," "A Summary of the Scientific Results," by John Murray, pp. 1430-1436, 1895.

<sup>2</sup> See Murray, "On the Deep and Shallow-Water Marine Fauna of the Kerguelen Region of the Great Southern Ocean," *Trans. Roy. Soc. Edin.*, vol. xxxviii. p. 343, 1895.

<sup>3</sup> *Bull. Soc. géol. de France*, sér. 2, t. xxv. p. 777, 1868.

It is stated that M. Solvay, who owns large industrial establishments in the neighbourhood of Nancy, has given 100,000 francs to the university of that city, for the purpose of erecting a chemical and electrical laboratory.

THE Senate of the University of Glasgow have resolved to confer the honorary degree of LL.D. upon Mr. J. Wolfe Barry, C.B., F.R.S., President of the Institution of Civil Engineers, London; Prof. John M'Cunn, Professor of Philosophy in University College, Liverpool; and Prof. W. Ramsay, F.R.S., Professor of Chemistry in University College, London.

A BLUE-BOOK just published shows that the total amount expended by local authorities on technical education during the year 1894-5 was 737,809*l.* 5*s.* 4*d.*; and that the estimated total expenditure on technical education during the year 1895-6 was 793,507*l.* 17*s.* 7*d.* These amounts are exclusive of the sums allocated to intermediate and technical education under the Welsh Intermediate Education Act, and amounting to 42,861*l.*

THE following are among recent announcements:—Dr. Hans Lemke to be assistant at the meteorological and magnetic observatory at Potsdam; Prof. Simmaro to be professor of physiological psychology in the Government School of Science at Madrid; Dr. E. Vischer, associate professor of botany at Bern, to be professor and director of the Botanic Gardens there; Dr. Ross to be curator of the Botanical Museum at Munich; Dr. J. Y. Mackay, professor of anatomy, to be principal of the University College, Dundee; Prof. P. Baccarini to be professor of botany in the University of Catania; Dr. O. Kruch to be professor at the agricultural experiment station in Perugia; Dr. W. Felix to be associate professor of anatomy in the University of Zürich.

A COMPARISON of the number of hours devoted to different departments in four Universities in the United States is made in *Science*. The following table shows the relative attention given to different branches of knowledge.

	Harvard.	Cornell.	Yale.	Princeton.
Classics...	8·7	8·0	24·2	22·6
European languages ...	22·8	18·8	14·5	12·4
English ...	16·8	16·3	10·9	11·3
Political science ...	9·9	6·5	11·2	9·6
History ...	14·3	8·2	10·4	
Mathematics ...	4·4	6·6	9·6	19·4
Philosophy ...	6·1	7·7	8·9	8·6
Natural science ...	10·2	23·5	8·1	8·8

It is pointed out by *Science* that Yale and Princeton agree somewhat closely in the distribution of studies, except for the excess in mathematics at Princeton. Harvard and Cornell also agree to a considerable extent, but Cornell devotes one-fourth of the entire time (the figures refer to the academic department) to science. It is noteworthy that in the Senior year at Princeton, when the studies become elective, only 3·8 per cent. of the time is given to the classical languages, and 15·1 per cent. to natural and physical sciences. The classical languages evidently only hold their position at Yale and Princeton through compulsion. European languages tend to take their place in large measure with some gains by English and the sciences.

### SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, March 4.—"The Palæolithic Deposits at Hitchin and their Relation to the Glacial Epoch." By Clement Reid, F.L.S., F.G.S., of the Geological Survey of the United Kingdom. Received February 15.

In continuation of the researches at Hoxne, communicated last autumn to the British Association, excavations and borings have been made at Hitchin, with the object of ascertaining whether the conclusions arrived at are supported by the study of a fresh locality. The results obtained at Hitchin are thoroughly in accord with those obtained at Hoxne. At each place brick-earth with Palæolithic implements can be proved to overlie the latest boulder clay of the district. At Hoxne the Palæolithic deposits were shown to be separated from the boulder clay by two distinct alluvial deposits, the newer of which yields an arctic flora, the older a temperate one. The arctic plants have not yet been discovered at Hitchin, but abundance of temperate species occur in the older alluvium.

At each locality the same story is told. Some time after the passing away of the ice the land stood higher than now, so that