NOTES AND NEWS.

MR. E. M. JOHNSON, a graduate of the State School of Mines at Rolla, has been appointed to a position as aide on the Missouri Geographical Survey.

— Mr. T. H. Cornish of Penzance has a note in the current number of the *Zoölogist*, according to *Nature*, on some remarkably large catches of fish on the Cornish coast. On March 18 last, 12,000 gray mullet (*Mugil capito*) were captured, by means of a draw seine, by the fishermen of Sennen Cove, at Whitsand Bay, Land's End. The fish were of fine quality, one being brought to Mr. Cornish which measured two feet in length, one foot three inches in girth, and weighed six pounds ten ounces. On the 31st of the same month a Lowestoft mackerel driver, fishing some leagues south-west of the Lizard, took 48,000 mackerel. No such catch of mackerel, for one night's fishing, had ever been heard of before at Penzance, and what makes it more extraordinary, says Mr. Cornish, is that it should have taken place in March, when the catches usually average a few hundreds only. Later on in the season, in the fishing west of Scilly, 20,000 to 25,000 is regarded as a heavy catch.

— The preliminary returns of the recent census operations in India, says *Nature*, show that the population in British territory is 220,400,000, as against 198,655,600 in the former census, an increase of nearly 22,000,000. The Feudatory States, omitting incomplete returns, which may be taken at about 90,000, have a population of 61,410,000, making a total of 281,900,000, as against 250,700,000 for the same areas at the last census. The returns give Bombay 806,000, Madras 449,000, Calcutta municipal area and port 674,000, and including the suburbs Howrah and Bally, 969,000. At the last census the total for the same area was 847,000. Calcutta municipal area shows an increase of 92,000, and Howrah and Bally an increase of 24,000. The returns from Burmah show that the population of the whole country, excluding the Shan States, is 7,507,063, or 48.8 persons to the square mile. The population of Lower Burmah alone is 4,526,432, or an increase of about 790,000 since 1881.

— The American Academy of Political and Social Science has just issued its first handbook, containing the Constitution, names of officers, report of the executive committee for the first year, and the list of members. Although in active service only twelve months, it now has a membership of 1,978 gathered from every State and Territory in the Union, and from ten foreign countries. The membership in the United States is widely scattered. California, for example, is represented by 25 members; Massachusetts, by 195; New York, by 200; Illinois, by 150; while Canada on the one hand, and our Gulf States on the other, have 20 and 40 respectively. There are over 50 members in England, besides several in Scotland and Ireland. France is represented by 4; Germany, by 16; Russia, Switzerland, Austria, Italy, and even Japan and India, contribute to the academy's membership. The varied character of the occupation of the members also testifies to the great interest which economic and political subjects are exciting at present in the public mind. Among the members are leading representatives of all professions and branches of business.

— The English Meteorological Council have just published an atlas of cyclone-tracks in the South Indian Ocean, from information collected by Dr. Meldrum of Mauritius, during a period of thirty-eight years, from 1848 to 1885 inclusive, with the exception of three years for which no reports of cyclones were received. According to *Nature*, the tracks are represented in two sets of charts, — one set showing the distribution in each year; and the other grouping the storms according to months, excepting for August and September, in which months no cyclones were recorded. In dealing with these cyclones, Dr. Meldrum has divided them into progressive and stationary. It is admitted, however, that some of the latter may have moved, but that their progress may not have been detected from lack of observations. The relative frequency of both classes of storms for the whole period is very small, varying from one in eighteen years for July, to five in three years during February and March; but, although the number of storms is so small, it does not appear likely that many have been missed, considering the untiring persistence with which Dr. Meldrum has pursued his investigations. The tracks of the several cyclones will afford much valuable information, and lead to a better knowledge of the latitude in which the recurvature of the storms in that ocean takes place. A cursory examination shows that the range of latitude over which the points of recurvature extend varies considerably, being from about 15° to 25° south.

— The trustees of the Indian Museum, Calcutta, have issued an interesting and instructive report, by Mr. E. C. Cotes, on the locust of north-western India (*Acridium peregrinum*). The report, as quoted in *Nature*, sums up the results of an investigation conducted in the entomological section of the museum. It seems to be established that most of the flights of this locust issue from the region of sand-hills in western Rajputana. Others, however, invade India from breeding-grounds which probably lie along the Suliman Range, or even, perhaps, in some cases, beyond India's western frontier, in the sandy deserts of Baluchistan, southern Afghanistan, and Persia, though reports received from these regions, Mr. Cotes says, are so fragmentary that no very definite conclusions can be formed from them.

— The Meteorological Department of the Government of India has published Part 3 of "Cyclone Memoirs," containing an elaborate discussion of the two most important storms in the Bay of Bengal during the year 1888,— viz., those of Sept. 13–20 and of Oct. 27–31,— and also of the cyclone in the Arabian Sea of Nov. 6–9, 1888, accompanied by tables of observations during and before the storms and by 29 plates. The following (*Nature*, April 30) is a very brief *résumé* of some of the more important conclusions arrived at by Mr. Eliot with regard to these storms, and with regard to cyclones generally in India: (1) that the difference of intensity in different quadrants is chiefly due to the fact that the humid winds which keep up the circulation enter mainly in one quadrant; (2) that the ascensional movement is usually most vigorous in the advancing quadrant, a little distance in front of the centre; (3) in consequence of this, and of rainfall taking place most vigorously in front of the cyclone, the isobars are oval in form, and the longest diameter coincides approximately with the direction of the path of the centre (this is not in the middle of the diameter, but at some distance behind); (4) that the cyclonic circulation cannot be resolved into the translation of a rotating disk or mass of air, and that its motion is somewhat analogous to the transmission of a wave; (5) that the direction of advance of these storms is mainly determined by rainfall distribution, and there is a marked tendency for storms to form in and run along the south-west monsoon trough of low pressure; (6) the lie of this trough depends upon the relative strengths and extension of the two currents.

— Among the contents of the current number of the *Journal of the Straits Branch of the Royal Asiatic Society*, as we learn from *Nature*, is a paper on the *Sphingidæ*, or hawk-moths, of Singapore, by Lieut. H. L. Kelsall, R.A.. Mr. H. N. Ridley contributes papers on the *Burmanniaceæ* of the Malay Peninsusa; on the so-called tiger's milk, "Susu Rimau," of the Malays; and on the habits of the red ant, commonly called the *Caringa*. These ants, although very ferocious, are remarkably intelligent; and Mr. Ridley gives a striking account of the way in which they make leaf-nests. They have also great courage, and do not scruple to attack any insect, however large. Mr. Ridley once saw a fight between an army of *Caringas*, who tenanted the upper part of a fig-tree, and an advancing crowd of a much larger kind of black ants. The field of battle was a horizontal bough about five feet from the ground. The *Caringas*, standing alert on their tall legs, were arranged in masses, awaiting the onset of the enemy. The black ants charged singly at any isolated *Caringa*, and tried to bite it in two with their powerful jaws. If the attack was successful, the *Caringa* was borne off to the nest at the foot of the tree. The red ant, on the other hand, attempted always to seize the black ant and hold on to it, so that its formic acid might take effect in the body of its enemy. If it got a hold on the black ant, the latter soon succumbed, and was borne off to the nest in the top of the tree. Eventually the *Caringas* retreated to their nest. The last to go had lost one leg and the abdomen in the fight; nevertheless,

Mr. Ridley saw it alone charge and repulse three black ants one after the other before it left the field.

— The establishment of the Wharton School of Finance and Economy as a department of the University of Pennsylvania in 1881, marked an epoch in American higher education. Mr. Joseph Wharton, one of the most successful business-men of Philadelphia, believing most thoroughly in the desirability of a higher education for business-men, and seeing in the business world about him but few college-trained men, determined to see whether a course might not be arranged which would appeal to this class. With this end in view, he gave the University of Pennsylvania $100,000, on condition that it would establish and maintain a course in finance and economy for the benefit more especially of those youth who expect to enter business careers. The curriculum was made up of two parts, — a liberal and a practical. The latter consisted of accounting, mercantile laws and practice, the organization and management of various industries, etc. The former was made up of American history and politics, European history and politics, political and social science, statistics, etc. The liberal elements in the course attracted many young men who had no idea of going into business, but wished the thorough training in history and politics which this course afforded. As a result, the students of advanced classes, who expected later to study law or go into journalism, or to teach history and political science, chose this course by way of preference. The school is only ten years old, and consequently cannot point to its alumni by the hundreds or thousands; but the dinner given to Mr. Wharton by the alumni and their friends on May 19 in Philadelphia bore ample evidence of the success which the school has attained. The new curriculum has produced a visible effect already on other American colleges. The new university at Chicago proposes to have a college of practical affairs, which will be in essence a reproduction of the Wharton School; while the Stanford University, in California, will attempt an even more ambitious scheme along this line.

— In the improvements in contemplation at the University of Pennsylvania, the plans for which are now under way, two of the needs of the university which have lately made themselves strongly felt will be provided for. One is the necessity of improving the heating and ventilation of existing buildings and providing for that of new buildings. The other is the need of providing for the growing demands of the Department of Mechanical Engineering. Heretofore each building has been heated by a separate plant in its basement, and has been lighted by gas. It has been decided to build a central heating-station, with a present boiler capacity of 1,200 horse-power, from which to heat all the buildings, at present eleven in number. In addition, the buildings are to be lighted throughout by electricity, and to be thoroughly ventilated by the use of large ventilating fans in the basement, which are to be driven by steam or electric motors; while the ventilating flues in the old buildings are to be changed to accord with the best modern practice. The engines and dynamos for this purpose are to be placed on the ground floor of a separate building, the two upper floors of which will be used by the Mechanical Engineering Department. These two buildings are so designed that additions may be made to them as need arises. The entire plant is to be put in, not only for the purpose of furnishing light and heat in the most economical manner, but, in addition, it is designed especially for the purpose of instruction, for which it will at all times be available.

— The Kentucky Experiment Station is located at Lexington, in the heart of the blue-grass region, and on a soil which has been formed from the decomposition of the underlying limestone rocks. On this soil potash has seemed to be the most needed element of a fertilizer for corn and potatoes, although it has not produced so marked an effect on wheat. Bulletin No. 33 of this station reports a series of experiments in applying fertilizers to corn, of which the following is the station's summary: "The results obtained this year are almost identical with those of the last two years; that is, first, that, in those plots where potash was one of the ingredients of the fertilizers used, there was a marked increased yield, both in corn and fodder; second, that in plot 15, where a fertilizer was used without potash, there was scarcely any increase in yield over those plots containing no fertilizer; third, that the greatest increased yield was made by using a combination of potash and nitrogen; fourth, that the use of muriate of potash alone resulted in a marked increased yield over the plots containing no fertilizers; fifth, that there was a profit in the use of fertilizers in every instance where potash was one of the ingredients, the largest net profit arising from the use of the mixture of nitrate of sodium and muriate of potash; sixth, that there was a loss by the use of fertilizers where potash was not one of the ingredients; seventh, that so far, potash fertilizers have shown their effect the third season after application." The Ohio station has been conducting similar experiments to those reported above, both on its farm in Columbus and on several other farms in different parts of the State; but the results differ from those of Kentucky in that no combination of fertilizers has produced a sufficient increase of crop to pay for the cost of application. In only one place has potash produced any marked effect in Ohio, and that was in Butler County, on a soil that is probably largely derived from similar rocks to those which have formed the blue-grass soil.

— In his monthly report for April, Mr. Arthur Winslow, State Geologist of Missouri, states that field-work during that period had been actively resumed. Examinations of clays and structural materials had been made in Franklin, Montgomery, Audrain, Warren, and St. Charles Counties, and the experimental work on the clays had progressed well. Examinations of coal deposits had been extended into Clinton, Caldwell, Linn, Schuyler, Adair, Sullivan, and Boone Counties. Detailed mapping was begun in Ray and Madison Counties, and about fifty square miles have been covered. Bad weather and the water-soaked condition of the country had, however, interfered with the progress of this work. Examinations of mineral waters had been made in St. Louis, Jefferson, Perry, Madison, Wayne, Laclede, Howell, Oregon, and Barry Counties, and samples had been carefully collected for analysis. Work on the zinc and lead deposits of the southern portion of the State has been resumed by the United States Geological Survey in co-operation with the State Survey. About the middle of the month a party of the Coast and Geodetic Survey, in charge of Mr. Isaac Winston, began the work of extending a line of precise levelling from Jefferson City westwards. This line was brought as far as Jefferson City several years ago, and is now extended in accordance with an application made by the State Survey to the superintendent of the Geodetic Survey. In the preparation of the report on the paleontology of the State good progress has been made, and several other reports are in course of preparation.

— A committee of the Appalachian Mountain Club has made arrangements for the free exhibition of the geographical collection of the Brooklyn Institute in Boston. The Winslow Skating-Rink has been secured for the exhibition for three weeks, May 11 to May 30. The collection includes all varieties of geographical appliances, chiefly for educational purposes, such as wall-maps, atlases, globes, models, views, diagrams, text-books, etc. It is comparable to the collection made by the Royal Geographical Society, and exhibited in London a few years ago. The materials have been given to the institute by all the leading publishers in this country and Europe. The collection was on free exhibition in Brooklyn during March, and was visited by about 30,000 persons, including many teachers with their classes. It is designed for exhibition in various cities before final incorporation in the museum of the Brooklyn Institute. The University Extension Society of Philadelphia, the Johns Hopkins University of Baltimore, and the National Geographic Society of Washington, are in correspondence with the institute with the intention of securing the collection in their respective cities. The collection has been carefully examined, and is deemed well worthy of attention from those interested in general education. It will be found suggestive to teachers from the large variety of materials that it includes; it will promote an interest in the study of geography among the pupils in our schools; it will prove of value to superintendents and principals of schools in giving opportunity for comparison of a large variety of maps, text-books, etc.; it will be attractive to the intelligent public generally.