WE learn from *The Geographical Journal* that Colonel P. Kozloff is about to start on a new exploring expedition to Mongolia and Tibet organized by the Russian Geographical Society, this being the sixth in which he will have taken part, and the third under his leadership. It is planned to last three years, and will consist of twenty-one persons. During the present year the expedition will proceed to Kiakhta, and then make its way through Mongolio *via* Urga and Khara Khoto to the Middle Nan Shan and Tsaidam. It will spend 1924 in Tibet, exploring the elevated region about the sources of the Yangste, Mekong, Salween and other rivers, and carrying out researches in geology, botany, zoology and ethnography. It is impossible to say at present what further work will be undertaken, *e.g.*, whether it will extend to southern and eastern Tibet, which, with their comparatively rich vegetation and animal life, offer an attractive field for study; nor can it be said whether it will return through China, Mongolia or Eastern Turkestan.

THE council of the Royal Institute of Public Health has accepted invitations from the mayor and the University of Bordeaux to hold its annual meeting there at Whitsuntide. The president will be Viscount Burnham, and the local honorary secretaries, Professor René Cruchet, professor of medicine in the University of Bordeaux, and M. G. Faure, treasurer of the Chamber of Commerce. The meetings will take place in the university. Special arrangements are being made for traveling and hotel accommodation.

DURING the first quarter of the current year, there were registered in the ninety departments of France: 196,105 births (living infants); 190,036 deaths (19,014 infants under 1 year); 70,656 marriages, and 5,666 divorces. The excess of births over deaths, during the first three months of the year, was thus 6,069. In the department of the Seine, there were reported, between January 1 and March 31: 19,444 births, 18,830 deaths (an excess of 614 births), 11,322 marriages and 1,432 divorces.

THE New York State Agricultural Experiment Station has leased from Vassar College a building which is to be used for special research in entomology and plant pathology in the Hudson River Valley.

UNIVERSITY AND EDUCATIONAL NOTES

THROUGH the death of the widow of the late William F. Milton, retired merchant, who was graduated from Harvard University in 1858, the university receives a bequest of over a million dollars. The will directs that the money be used for the erection of a new library, but should the university possess an adequate library—which is the case—the money is to be used for research.

THE creation of a chair of hygiene and physical culture at McKendree College, Lebanon, Illinios, is provided for, and a bequest of more than 10 acres of land near the college is made in the will of the late Dr. Benjamin M. Hypes, St. Louis, a founder of the Marion Sims Medical College. It will be known as the Benjamin Hypes Professorship, in memory of the testator's father.

A $12,000 foundation, to be known as the Maurice Stern Fund for Medical Literature, has been given to the Tulane University School of Medicine, New Orleans, by Mrs. Maurice Stern as a memorial to her husband. The income from this will be used to purchase medical periodicals for the school library, and for medical books selected by the faculty.

THE board of directors, New Jersey Zinc Co., Palmerton, Pa., has voted a fund of $15,000 to Lehigh University, Bethlehem, for the founding of the New Jersey Zinc Co. research fellowship in science and technology. The income from the amount will be paid to the holder of the fellowship, who must be a graduate student from the institution in some division of engineering or science.

DR. CHARLES KEYSER EDMUNDS, who recently resigned the presidency of the Canton Christian College of China, has been elected to the newly established office of provost of the Johns Hopkins University.

DISCUSSION AND CORRESPONDENCE

"SOOT" IN COAL

WHILE on a visit to the Bertha Mine in the Scott's Run District, West Virginia, the writer's attention was called by the mine boss, Charles Miller, to a soft, wet inclusion in the Pittsburgh coal. Samples were gathered later through the courtesy of Mr. Miller and his assistant, Mr. Brown, and a brief study was made of the occurrence.

This inclusion, called "soot" by the miners, varies in color from brown to dull black when wet. When dry, all specimens collected were brown. The wet masses are of soft putty-like consistency, modified in some specimens by a distinctly gritty feel. When worked in water, most of the mass breaks into minute, formless particles which are held for some time in suspension, and into heavier gritty particles or pieces which quickly go to the bottom. This gritty material was found by qualitative tests to be mostly sulfur and iron, which it will be assumed were combined, at least before alteration, as pyrite. Some unaltered coal was found included with the grit.

When dry, the soot looks very much like the "punk"

of decaying wood and some is light enough to float on water. A loss of 36 per cent. of the mine wet weight and considerable shrinkage in volume was found after drying a sample on the water bath. Especially when wet it readily stains the hands, this possibly giving rise to the name.

The soot is found in elongated, flattened to cylindrical masses, not limited to any portion but most frequently found in the upper part of the coal. The shape of the inclusions suggested vegetation that had resisted alteration, but the lack of contact markings or of definite structure discouraged such a conclusion.

While sometimes in contact with bright coal, the inclusions are usually surrounded with a bony or pyritiferous material. The study so far made suggests the contained pyrite (and surrounding pyrite when present) as responsible for the soot. As particles of unaltered coal occur mingled with pyritic matter in the soft organic mass, it seems probable that the original coal has been altered to this condition by the presence of the pyrite and circulating ground water, which have destroyed the structure and changed the physical characters of the coal. The change might be brought about in part by physical shattering of the coal as the included pyrite was altered, as well as by chemical action. In several ways the soot behaves like the adjacent unaltered coal, including its manner of coking under the blowpipe flame. Unlike the action on coal, the action of nitric acid on either the raw soot or on the washed gritty residue is strikingly vigorous. This is believed to be due to either the finely divided or disintegrated state of the pyrite.

Samples were shown to Mr. David Reger of the State Survey, who states that he has noted occurrences of similar nature in several coals found in West Virginia, but has made no special study of them. Dr. I. C. White, head of the survey, kindly offered the services of the survey chemist, Mr. B. B. Kaplan, in making an analysis. The report of this analysis, just received, tends to confirm the writer's conclusions. The following results were obtained for the "darker" specimen "which analyzes as though it were a crushed bituminous coal":

Moisture	17.15 per cent.
Volatile matter	39.74 per cent.
Fixed carbon	30.31 per cent.
Ash	12.80 per cent.

No quantitative analysis for sulfur or iron was made, but attention was called to the probably high content of each. "The brown variety behaves more like a crushed coal that has been exposed." This statement would suggest that the disintegrating chemical action had proceeded farther in the case of the lighter color.

The readiness with which most of the pyritic matter settled out of the mass when washed with water may imply that it is foreign and probably feasible to reduce in unaltered coal by modern crushing and washing methods when its content becomes too high.

The amount of "soot" in this mine is too small to have any economic significance, but the occurrence seems sufficiently interesting to warrant some discussion as to its presence in other localities.

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WEAK LEGS IN CHICKENS

DURING the past few years a number of investigators have attempted to use young chicks as experimental animals in the study of nutrition problems. Some have reported favorable results while others have been unable to grow normal chicks in confinement even when feeds were used that had proved to be adequate for rats and other experimental animals. The chicks usually developed a condition known as "weak legs" which is characterized primarily by improper bone development and the failure to develop secondary sexual characteristics.

Experiments which we are now conducting show this condition to be identical with rickets in mammals. The lesions are the same and the conditions under which it is produced are the same as those which cause rickets.

These experiments show that young chicks receiving a standard scratch feed and mash supplemented with sprouted oats and fresh buttermilk will develop rickets (weak legs) if they are kept in a room where the light is filtered through glass, while chickens receiving the same treatment but exposed to direct sunlight a few hours each day will develop normally. Ultraviolet light was found to have the same beneficial effect as sunlight. It was also found that cod liver oil, which has been shown to contain a substance which will prevent rickets in mammals, would prevent this condition in chickens.

A complete report of this experimental work will appear in *Poultry Science* in the near future.

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NITROGEN LOSSES FROM COMPOSTS

THE loss of nitrogen from compost and manure heaps is the avenue for waste of the greater part of this element in feeds. Even under most careful handling this waste is not readily controlled, because while mechanical safeguards against leaching, etc., may be employed, there still remains the considerable loss through the atmosphere due to biological agencies.

The value of nitrogen fertilizers in fixing the or-