

In the department of geology of Northwestern University the following appointments have been made, to take effect on September 1, 1914: Joseph E. Pogue, of the U. S. Geological Survey, to be associate professor of geology and mineralogy; William H. Haas, of the University of Chicago, to be instructor in geology and geography; Henry R. Aldrich, of the Massachusetts Institute of Technology, to be instructor in mining and metallurgy; John R. Ball, of Northwestern University, to be assistant in geology.

MR. F. E. E. LAMPLOUGH, of Trinity College, has been appointed demonstrator of chemistry in the University of Cambridge.

MR. D. T. GWYNNE-VAUGHAN, professor of botany in the Queen's University, Belfast, has been appointed to the professorship of botany at University College, Reading, vacant by the resignation of Dr. Frederick Keeble, F.R.S., who has been appointed director of the Experiment Station and Gardens of the Royal Horticultural Society at Wisley.

DR. NIELS BOHR, of the University of Copenhagen, has been appointed reader in mathematical physics in the University of Manchester.

DR. AUGUST GUTZMER, professor of mathematics at Halle, has been elected rector of the university for the coming year.

DR. EUGENE KORSCHTEL, professor of zoology and comparative anatomy at Marburg, has been called to Leipzig, but has decided to remain at Marburg.

DISCUSSION AND CORRESPONDENCE

LIGHTNING FLASHES

TO THE EDITOR OF SCIENCE: It often becomes necessary for me as editor to refer special questions that arise to those who are better versed in the knowledge of some special branch of physics.

I should be glad if any one of your readers who has considered the question of the oscillatory character of lightning would give me a short report, from either a theoretical or an observational point of view, as to what is known on this subject, or his own experience

therein. An elaborate paper on this subject was published in the *Meteorologische Zeitschrift* for September, 1913, by Professor Dr. Josef Mayer, of Freising, Bavaria, defending the conclusion that although the lightning flash is frequently oscillatory, yet it is also often of a complicated nature in which every variety of the discharge can occur, namely, both a preliminary, a principal, a partial and an after discharge; partial discharges of a simple nature as shown by Feddersen, or of a double nature as shown by Walter; moreover, the discharge of thunder-clouds may also, under certain conditions, be continuous, but under others, oscillatory or again pulsatory.

This subject is one that interests every scientist who is subject to danger from lightning. I hope to receive responses from electricians and physicists whose experiments and experience tend to elucidate the subject.

CLEVELAND ABBE

U. S. WEATHER BUREAU

A NEW FORM OF COLLECTING PIPETTE

THE pipette described below has proved very useful to the writer. It is made from a calcium chloride tube about 200 mm. long and the ordinary 50 c.c. rubber bulb commonly used with the larger rubber-bulb pipettes. Both are stock articles and may be readily procured from laboratory supply houses. The calcium chloride tube used in the pipette figured consists of a glass bulb about 35 mm. in diameter blown in a glass tube of 16 mm. diameter and about 120 mm. long. This tube required to be heated over a flame and drawn out to the desired diameter for the pipette mouth. From the opposite end of the glass bulb there extends a tube about 6 mm. in diameter suitable for attachment of the rubber bulb.



FIG. 1.

This form of pipette may be used in handling in water any small or delicate object up to six or eight mm. in diameter. (Not

quite so large a mouth could be utilized if the pipette were to be used in liquids lighter than water.) It is a most useful collecting convenience. In places where a small net could not be used because of stones or other debris and in handling objects liable to injury in a net the writer has found it almost indispensable. The capacity of the rubber bulb and the large mouth of the pipette make it possible by means of a sudden suction to catch small animals too quick to be taken in a small gauze net. The glass bulb retains all the sucked-in water, enabling one to see what has been taken and obviating the difficulty of losing or mutilating a choice specimen by getting it into the rubber bulb. The pipette is not over-fragile and is short and convenient for slipping into the pocket or collecting case. It is also more convenient to use than the long pipette in common use.

The calcium chloride tubes are made in various sizes. For a smaller pipette a rubber bulb of 25 c.c. capacity and a calcium chloride tube 150 mm. long may be used. The cost of the pipette is slight.

ARTHUR M. BANTA

STATION FOR EXPERIMENTAL EVOLUTION

IS MELANISM DUE TO FOOD?

It is a well-known fact that occasional dark-colored individuals occur among wild animals of various kinds. Once in a while a pure black beaver is caught. Fur traders sometimes pick up skins of mink, otter, marten and other animals which are coal black. These skins are especially valuable. Perhaps the best known instance of dark specimens occurring in a species ordinarily light in color is that of the silver or black fox, which may be one in a litter of common red foxes.

This occurrence of dark animals is called "melanism," but so far science has failed to ascertain the cause. It is my purpose in this article to call attention to some facts which may or may not throw some light on the subject, but which seem to me to be at least suggestive.

Northern Minnesota has been a great fur-producing region ever since the Hudson Bay

Company established posts here at the headwaters of the St. Lawrence, the Mississippi and the Red River of the North. We should expect, and the fur traders actually get choice furs from this cold, high, heavily wooded land of lakes. The high grade of furs obtained in northern Minnesota is well known to the trade; the value of the annual catch, over a million dollars, is something less widely known.

It is commonly supposed that the relative proportion of different kinds of fur caught in the state runs along fairly constant year after year. This is not the case for two reasons. A series of years may be favorable for the increase of a species, resulting for a time in an abnormally heavy catch of that animal. As an instance of this, we cite the Canadian lynx, which increases with the abundance of the snowshoe rabbit, and suffers or migrates at intervals when its food supply has been seriously reduced by the dying off of the rabbits from the so-called "rabbit plague." Perhaps a better instance is that of the muskrat, which may increase because of several winters during which ice and water conditions are favorable to its "wintering over." The other reason is that which gives rise to this article. A species like the red fox may suddenly show an unusually strong tendency to vary from its type.

Ordinarily there are caught annually in northern Minnesota somewhere in the neighborhood of fifteen hundred red foxes. Of this number of skins, we venture to guess that, for the five years preceding the winters of 1911 and 1912, not more than ten each year were sold as black or silver foxes, and not over forty as cross foxes. The winter of 1911-12 saw a marked increase in the number of high-grade fox skins brought in to the posts, and there was a still further increase in 1912-13. In the Rainy River watershed, especially, it seemed as if about one fifth of the foxes caught last winter were either dark, silver or cross foxes. This winter, 1913-14, the percentage of these high-grade color phases is even higher.

During the past three years there has been an abundance, amounting almost to a plague, of mice (white-footed wood-mice) in the