that, contrary to the general rule, northern Europeans have succeeded there better than southern Europeans. Italian laborers on the railroad are reported as having suffered more from the climate than many Scandinavians employed on the river. It must be remembered, however, that, of the two occupations, railroad construction and steamboat service, the latter is usually far more healthy, especially in a tropical climate, and a higher disease and death rate are naturally to be expected among persons engaged in the former occupation.

A NEW MOUNTAIN ANEROID BAROMETER.

WHYMPER, in the London *Times* of December 17, 1898, describes a new mountain aneroid which gives results of astonishing accuracy. The ordinary aneroid is well known as being a very inaccurate instrument at high altitudes. In Appendix C ('Comparisons of the Aneroid against the Mercurial Barometer'), in his 'Travels amongst the Great Andes of the Equator,' Whymper himself says that "with aneroids of the present construction it is unlikely that decent approximations to the truth will be obtained at low pressures, even when employing a large number of instruments." The errors in Whymper's whole series of observations amounted in the worst cases to as much as two inches, as compared with the mercurial barometer. The new barometer is the invention of Col. H. Watkin, C.B., Chief Inspector of Position-Finding in the (British) War Department. It is so constructed that it can be thrown out of action when not in use, and put in action when required. When out of action no variations in atmospheric pressure, however large, produce any effect on it. This adjustment is effected by having the lower portion of the vacuum box so arranged that it can rise, instead of having it fixed, as is usually the case. A screw arrangement is attached to the lower portion of the vacuum chamber, and under ordinary conditions this screw is released and the chamber put out of strain. When a reading is to be made, the screw is turned as far as it will go, thus bringing the instrument into the normal condition in which it was graduated. Whymper has made a large number of readings with the new aneroid and finds the error, in the mean of 65 observations, below ± 0.0 in. He feels confident that, "in the hand of those who will give the requisite attention, extraordinary results may be obtained from Watkin's Mountain Aneroid in observations made for altitude and in determining differences of level." The instrument is made by J. J. Hicks, 8 Hatton Garden, London.

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ZOOLOGICAL NOTES.

THE NEW YORK ZOOLOGICAL PARK.

BULLETIN 3 of the New York Zoological Society bears testimony to the rapid progress that has been made since July 1, 1898, as may be seen by the following statement of work completed up to December 1, 1898. The Elk House has been practically finished. The Bird House is ready to receive its roof. The foundation walls of the Reptile House have been completed, and the steel floor-beams put in place. All excavating for the first series of Bear Dens has been completed, also all plumbing for drainage and water-supply. The brick walls of the bathing-pools have been built, and stone walls to carry the iron work. The excavation of ponds for the Ducks' Aviary and the construction of three islands have been completed. On the south island twelve enclosures have been laid out, with suitable shelter-houses, and about one hundred native shrubs have been planted. A stone wall, going down to bed rock, has been constructed around the Prairie Dogs' Knoll (eighty feet in diameter), and capped with cut stone. Excavations have been made for the walls and stone work of eight Wolf and Fox Dens, and the walls have been laid ready for the cage work. One sleeping den for wolves has been constructed. About five hundred cubic yards of sandy earth has been hauled to the Pheasant's Aviary, to make dry ground for the runways. This was removed by necessity from the Bear Dens, at no cost to the Aviary. The excavation for the Beaver Pond has been completed, and all the grading necessary thereto. The excavation necessary for the Buffalo House has been made. A trench nine hundred and sixty-three feet in length, has been dug for the stone walls to

support the iron fence for the Beaver Pond. The Society is in urgent need of an antelope house and a monkey house, and it is hoped that these will come as gifts from individuals, as the provision hitherto made is for the accommodation of American quadrupeds and birds, and this will exhaust the $106,000 at the disposal of the Society.

The most elaborate of the structures commenced is, by all odds, the Reptile House; this will have a length of 146 feet and a width of 100. It is being constructed of buff mottled brick, combined with granite and terra-cotta. It will be roofed with slate, heated by hot water, and its cost, with cages, will be about $40,000. It is beautifully situated on the edge of a forest of great oaks, very near the geographical center of the park. Close to the southeastern corner of the building is a natural pool in a wide outcrop of granite rock, which will speedily be converted into a summer home for saurians.

It is hoped that the Reptile House can be completed by April, 1899, in time to receive its cages and collections for the opening of the park in May.

The Director has found it necessary to give a chapter 'concerning the purchase of wild animals,' which deserves to be widely read, since with the proper changes it may be made to apply to collectors in various branches of history. The gist of it is contained in the following paragraphs:

"Not unfrequently it happens that a hunter who captures an animal that to him is strange imagines that it is worth double its real value, and feels indignant when a zoological garden offers him what is really a fair price. In about nineteen cases out of every twenty the man who captures a wild animal thinks it is worth far more than it really is. For example, if we were to offer a farmer's boy $2.50 for a wild goose that he had caught and cooped, the chances are he would be highly indignant; but at this moment we know of thirty-two wild geese for sale, property crated, at that price.

If we were asked to name the greatest small annoyance that comes in the daily mail of a zoological park we would reply: The letters which say, "What will you give me for it?" Very often not the slightest clue is given to the size, age, sex or condition of the captive animal. All these are left to be divined by the man who is asked to submit an offer."

F. A. L.

THE STATISTICAL METHOD IN ZOOLOGY.

THE statistical method of biographical investigation has recently been used by Walter Garstang, the naturalist in charge of the fishery investigation of the Plymouth Laboratory, with great success. He claims that it is possible to identify the different schools of fish which approach the shore, even when these schools are made up of individuals which appear to be quite alike. He shows that the mackerel of the American coast are really different from the animals of the same name found along the European coast, and he further shows that the mackerel which frequent the shores of the British Isles may be sub-divided into two principal races, an Irish race and a race frequenting the English Channel and the North Sea. It thus seems that a species heretofore supposed to be widely distributed and given to migrating over long distances of the ocean is really cut up into a number of races, which probably do not intermingle and which may have very limited ranges. If it can be proved—and it now appears to be proved—that the local representatives of each species of animals are branded with indices of consanguinity, which indices may be detected through the plotting of curves of frequency, a new and most fascinating line of investigation is opened to the zoologist, the comparative anatomist and the student of geographical distribution.

H. C. B.

BOTANICAL NOTES.

A BOTANICAL ALMANAC.

A HANDY little book, bearing the title of 'Deutscher Botaniker-Kalender für 1899,' has been prepared by Paul Sydow, of Berlin. It is modeled after the well-known 'Chemiker Kalender' of Dr. Biedermann, which for twenty years has been well-nigh indispensable to the chemists and physicists. This botanical almanac includes a diary (in which notable events, as the births and deaths of great botanists, are recorded), a money table, tables of weights and