

sturgeons would cause one to look for them especially. So Jordan and Evermann (Bulletin 47, U. S. N. M., Pt. 1, p. 101), in their characterization of the Polyodontidæ, say definitely, 'no barbels.' Only within the last few weeks I have discovered what is seemingly the only reference to these barbels, in a paper by Mr. Edwards Phelps Allis, Jr. (*Zoologische Jahrbücher*, Abth. für Anatomie, etc., Vol. 17, p. 671).

In a specimen of *Polyodon* 85 cm. long, these barbels lie 47 mm. in front of the mouth, on the ventral surface of the 'paddle.' They are 23 mm. apart, and the right one measures 3.5 mm. in length. The left one is considerably shorter, and in general there is considerable difference in their size in different individuals. They are very slender, nearly colorless, and translucent. It seems doubtful whether they are functional.

The fact that these barbels have not heretofore been noticed even by our best systematists suggests the idea that they may not be present in specimens from other regions. As to this point I hope to gather evidence next summer, in connection with other researches on *Polyodon*.

Another interesting point concerning *Polyodon* is the occurrence of peculiar small true scales over the surface lying over the entire scapular arch and extending forward the entire length of the isthmus. They thus form a barrier that must be crossed to enter the branchial region from behind. As this entire region is well covered over by the large opercular flaps and gular pouch, it was at first very difficult to see any significance in such an arrangement. But a few observations in the field soon disclosed the meaning. *Polyodon* is preyed upon, more than any other fish I know of, by the lampreys. To find from ten to fifteen of them attached to one paddlefish is not uncommon, and there is scarcely an individual that bears no scars. Once or twice I observed the lampreys had worked their way under the opercular flaps. Now these, if they worked further forward would encounter the band of scales which would undoubtedly stop them, to judge from their avoidance of scaled areas on other fishes. An examination, how-

ever, shows that just inside of this band lies the great branchial artery, but little below the surface. It is evident, therefore, that this band of scales is an important adaptation for the protection of this vital region against attack from so fearful an enemy as the lamprey.

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CURRENT NOTES ON METEOROLOGY.

CLIMATE OF THE PHILIPPINES.

In an article by Gannett on 'The Philippine Islands and Their People,' published in the *National Geographic Magazine* for March, there are some notes on Philippine climate. The mean annual temperatures are not far from 80°, the range between the mean temperatures of the warmest and coldest months at Manila being but 7°. Temperatures of 100° are almost unknown. The lowest temperature on record is 60°. The diurnal range near the seacoast rarely exceeds 15°, and the mean for the year is only 11°. The relative humidity is always high, being usually at least 75 per cent. From November to June the northeast trade, and from July to October the southwest monsoon, is the prevailing wind. Rainfall is much heavier on the windward than on the leeward sides of the mountains. In most parts of the islands the northeast trade wind gives the dry season, and the southwest monsoon brings the rains. The mean annual rainfall varies between 40 and more than 100 inches. At Manila, four fifths of the annual rainfall comes between the first of July and the end of October. Then the streets are flooded, the air is saturated, and things are covered with mould.

CONDITIONS OF ATMOSPHERE DURING FOGS.

In *Das Wetter* for January, Elias discusses the conditions of the lower air during fogs, as shown by kite observations at the Aeronautical Observatory near Berlin during the years 1901-2. The results are plotted to show the variations in temperature, humidity and wind with altitude. The most striking fact is that

an increase of temperature with altitude during fog is an exception, and is observed only at the beginning of fog formation, or during very light ground fogs. The usual condition is a decrease of temperature, and occasionally a very rapid decrease.

NOTES.

A PAPER by Sir J. Norman Lockyer, on 'Simultaneous Solar and Terrestrial Changes,' read before the Southport meeting of the International Meteorological Committee (September, 1903), is published in *Nature* for February 11. In this paper Lockyer reviews the work done along similar lines by previous investigators, and gives the results of his own studies, to which reference has already been made in these Notes.

Smithsonian Miscellaneous Collections, Quarterly Issue, July-September, 1903, contains 'Recent Studies of the Solar Constant of Radiation,' by C. G. Abbot.

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THE PELÉE CLUB.

THE PELÉE CLUB held its second annual meeting at the New Willard Hotel, Washington, D. C., February 27.

This unique organization is composed of men who participated in the events connected with the relief, scientific and news-gathering expeditions to Martinique and St. Vincent. Its original membership embraces about eighty people, including officers of the navy and army, geologists, journalists and magazine writers.

While the club was originally organized to perpetuate the associations and friendships formed during the exciting moments of the Martinique incident, at its first annual meeting it was resolved to make the organization of permanent value to mankind by taking upon itself the function of collecting, as nearly as possible, a complete record of the events of the recent Martinique eruption, and by publishing them in a composite volume, which is well under way.

The society also undertook the collection of all photographs pertaining to the eruptions and relief expeditions, and this has resulted in a collection of nearly two thousand negatives

by Professor E. O. Hovey, chairman of the committee on photographs. The society has made the New York Museum of Natural History (the only American institution, except the National Geographic Society, which has exhibited serious interest in the West Indies) the permanent repository for its collection of photographs and records.

Having progressed thus far, the society at its recent meeting still further expanded its functions. Realizing that the subject of volcanic geography in its widest sense, including all branches of interest pertaining to volcanic countries and phenomena, is a wide and unorganized field of cooperative study, the society has resolved to widen its sphere of usefulness by taking up this subject and becoming a permanent organization for its study. Accordingly it resolved to use the present organization as a nucleus for the expansion of the association, to adopt a permanent organization and to expand the membership by taking into the society all investigators interested in the subject of volcanoes.

When the importance of vulcanism in relation to the environment of man, the part it plays in the structure of the earth, and how little is done to systematically study these subjects, is considered, it is evident that the Pelée Club has before it a most interesting and useful study. The character of its membership is unusually favorable for its successful operation, and it is believed that it will especially stimulate interest in the recording of the important geographic observations of the large number of intelligent observers in the army, navy and journalistic circles, while the purely scientific element is also large and influential.

The society has also resolved to use its influence for the encouragement of local organizations wherever they may be and accept as an affiliated society the unique Club Montagne of Guadeloupe, which in the out-of-the-way island of that name has provided an organization for the study of the Grand Soufrière, the highest and most dangerous-looking volcano of the West Indies, and which, at its own expense, has constructed a road to the summit and made arrangements to guide and enter-