pressed fish and the structure and relations of the fins to each other and the interspinals, as well as other skeletal details, conclusively demonstrated that the animal was closely related to the existing *Antennarius* and *Pterophryne*. Indeed, with skeletons of those forms before me, after elimination of faults of restoration, I could find no generic differences between the fossil and the recent *Pterophryne*. The caudal of the extinct species, it is true, was longer and that difference may be correlated with others observable by close scrutiny, but the figures published do not give details with sufficient clearness to appreciate them.

Still more apt than Dr. Eastman supposed, then, are his remarks: "Attention should be called * * * to the remarkable fact of a type of fish-life appearing suddenly in the Eocene, already highly modified, without any known predecessors nor any that can be plausibly conjectured, but which persists after its first introduction essentially unchanged until modern times."

The recognition of the relationship of '*Histionotophorus*' accentuates the deduction. We now have two (the only known) eocene Pediculates so nearly related to greatly differentiated recent forms that their generic differences, if any, remain to be discovered—the *Lophius brachysomus* and *Histionotophorus* (perhaps *Pterophryne*) *bassani*. Yet the Pediculates are exceptionally aberrant and specialized fishes. The significance of the facts may be appreciated when it is recalled that nearly all the contemporary mammals belonged to extinct families or, conversely, that almost all the recent families have been evolved since—so far as we know.

The history of the form is noteworthy. De Zigno (1887) recognized its similarity to the genus *Antennarius* (Questa forma * * * presenta qualche somiglianza col genere *Antennarius* di *Commerson*) but distinguished it by its form, horizontal mouth and elongated fin-rays, especially those of the caudal. Smith Woodward, without reference to the views of De Zigno, noticed it, among the 'Scorpænidæ,' as one of the 'extinct genera and species, which are not represented in the collection, [and] are supposed to be related to *Scorpæna*.' Eastman's view has just been given. It only remains to add that no such differences as are urged by De Zigno exist, except the long caudal rays. The horizontal mouth is the result of distortion through pressure. The figures marked on Eastman's plate (I.) '1.' and '1a' show the subvertical mouth.

One more of several points raised by Dr. Eastman's important memoir may be alluded to.

Another Monte Bolca fish has been described and photographed as *Symphodus szajnochæ* (= *Crenilabrus szajnochæ* Zigno). The non-labrine appearance and osteological characters led me to read the description. It appears, according to Dr. Eastman, that 'there are at least eight branchiostegal rays' and that 'the scales are thin, ctenoidal and very strongly pectinated.' It is, therefore, evident that the species is not even related to the labrids. The characters specified are rather those of berycids, but it belongs to no known genus and the family even is uncertain. The combination of form, rounded caudal, single dorsal with eleven stout spines, and anal opposite soft dorsal, with ctenoid scales and increased branchiostegal rays, separate it from any other fish, so far as known, and it may be differentiated as a distinct generic type and named *Bradyurus*. It is to be hoped that Dr. Eastman may reexamine the fish and give the results of his review.

Theo. Gill.

THE RE-DISCOVERY OF DINOMYS.

The great rat-like rodent *Dinomys* was discovered in 1873 in the Peruvian Andes, and since that time the specimen, which is preserved in the Berlin Museum, has remained unique. In the spring of this year Dr. Goeldi, of the Museum of Para, announced the rediscovery of this rare animal in the lowlands of Brazil. The following notes as to its appearance and habits are abridged from Dr. Goeldi's account of this animal which appeared in the *Proceedings of the Zoological Society* for May and June.

The general build of *Dinomys* is thick-set and inclined to corpulency. Due to the fact of setting

the whole plantigrade sole on the ground, the hind feet especially, the *Dinomys* has a waddling gait, and reminds one of an immense rat well advanced in development towards a bear.

The predominant feature of the character of *Dinomys* is a combination of leisurely movements and supreme good nature. It knows absolutely nothing of haste. Spending the greater part of the day sleeping in a corner—the mother often lying upon the young one, or standing over it, as if to protect and to keep it warm—opening its half-closed eyes only when it hears the approaching steps of the keeper, it forms the resolution to move with slow gait, expecting some food, evidently governing its movements as much by hearing and smell as by sight. It is not easily irritated, and permits one to stroke and to scratch its head and back, and only occasionally manifests its displeasure by a low guttural growl. I have never yet observed a manifest intention to bite. When let out of the cage it makes no attempt to escape, and limits its excursions to an exploration of the immediate neighborhood in search of something to eat. It occasionally scratches itself rapidly with its long claws, which is the only occasion on which it manifests a capacity for rapid movements when required. One thing not yet definitely verified by us is its proclivity for digging, the development of the claws at least leading to the supposition that the animal is well fitted for that purpose. The amiable relations always existing between mother and son prepossesses one most favorably as to the natural disposition of the animals.

As matters now stand, it would be justifiable to suppose that the true home of *Dinomys* is not properly in the Peruvian Andes, and that the first specimen found there was merely a stray individual and that its actual habitat may rather be located in the almost unexplored regions of the eastern slopes and tablelands of the Bolivian and Peruvian foot-hills bordering on Brazil, including geographically the head-waters of the rivers Acre, Purûs and Juruá. F. A. LUCAS.

CURRENT NOTES ON METEOROLOGY.

MONTHLY WEATHER REVIEW.

THE two latest issues of the *Monthly Weather Review* (July and August, 1904, dated September 19 and October 21 respectively) contain the following papers of general interest: 'The Movements of the High Clouds in the West Indies,' by J. T. Quinn; 'Attempts at Methodical Forecasting of the Weather,' by L. Besson (translated from the French); 'Air Radiation,' by C. C. Hutchins and J. C. Pearson, of Bowdoin College; and notes on 'Meteorology at Montpellier, France,' 'Early American Weather Records,' 'Weather and Crops in Arizona,' 'The Climate of Manila,' 'Secular Changes in Climate,' 'The Capacity of the Air for Aqueous Vapor,' 'Temperature of the Upper Atmosphere,' 'Precipitation in Wisconsin,' 'Meteorology in Chile' and 'Cannonading against Hail.' Further, 'The Annual and Geographical Distribution of Cyclones of High Velocity in the United States, 1893–1902,' by Stanislav Hanzlik; 'Dust in the Atmosphere during 1902–03,' by Andrew Noble; 'The Origin of the Cuba Cyclones of June 13–14, 1904,' by Maxwell Hall; and the following notes: 'The Primary and Secondary Rainbows,' 'Formation and Movement of Hurricanes,' 'A Legal Decision as to Damage by Lightning and Wind,' 'Are the Movements of Thunderstorms deflected by the Tide?' and 'The Diurnal Variation of the Barometer at Milwaukee.'

CHANGES IN BLOOD AT HIGH ALTITUDES.

DR. K. BURKER, of the Physiological Institute of Tübingen, has been making an experimental study of the physiological effects of high altitudes at the Schatzalp Sanatorium, 6,119 feet above sea-level. In the case of rabbits brought from a lower level, and kept for different lengths of time at 6,000 feet, an increase of 25 per cent. in the amount of iron in the blood was noted. The liver showed first an increase of iron; then, after a longer time at the greater altitude, a decrease, and in the case of rabbits kept still longer, there appeared to be less iron than in the livers of rabbits at Tübingen. In a similar line are the studies of the blood of human beings made by Dr. Gaule during two balloon trips. The effect of the balloon trips was to increase the number of red corpuscles of each of the persons examined. Similar results have previously been obtained by Viault, Müntz and others.

AN INSTRUMENT FOR DETERMINING WIND AT SEA.

IN the *Quarterly Journal of the Royal*