

elaborate analyses of coals, we find that in the coal-pit sections the names of characteristic fossils have found their way into the text, that notices are given, not merely of the economically useful minerals, but of the geological formations which have no special industrial value,—Silurian, Drift, River-terraces, &c. The volume contains also meteorological tables and notices of recent geological changes. But by far the most interesting contribution to science in its pages is a "Report on the Wyandotte Cave and its Fauna," contributed by Prof. E. D. Cope, with an account of the geology of the cave, by Prof. Cox himself. This remarkable cavern runs through the "sub-carboniferous" limestone in numerous branches which are said to have a total length of twenty-two miles, and greatly to excel the more famous Mammoth cave of Kentucky in the number and beauty of their stalactites. It contains a peculiar fauna, numbering at least sixteen species, which show a general resemblance to those of the latter cave, and include one species of blind fish (*Amblyopsis spelæus*) which lives in the subterranean waters of Kentucky.

In these Reports each county is described separately, so that the same geological facts require to be frequently repeated. This is, doubtless, the most useful arrangement for those for whom the volumes are primarily intended. But it would be a service to other readers if a good table of contents were given, and if the index were made much fuller, especially in matters of general geological interest. The volumes are eminently praiseworthy, and we hope to see them followed, before long, by a good map and a general geological Report of the whole State of Indiana.

A. G.

INTELLECT OF PORPOISES

A SINGLE visit to the Brighton Aquarium would suffice to convince a recent correspondent, Mr. Mattieu Williams, that the intellect of the porpoise, as foreshadowed by its convoluted brain, exceeds, beyond comparison, that of the cod-fish or any other representatives of the piscine race. Of the two specimens now inhabiting the largest tank in the building, over one hundred feet long, the first-comer so readily accommodated itself to its altered conditions, that on the second day it took its food, smelts and sprats, from its keeper's hand; and has continued to do so ever since. The later arrival was, at first, less sociably inclined; but both have latterly become equally tame, and frequently, while receiving fish from my hand with the gentleness of pet dogs, have permitted me to pat and stroke their slippery india-rubber-like backs.

During feeding-time it is amusing to watch the avidity with which these porpoises take their food; one, the more active of the two, usually securing the lion's share, and displaying marked sagacity by frequently snatching a second or third morsel before disposing of the first.

The keeper in charge of these interesting animals is now in the habit of summoning them to their meals by the call of a whistle; his approaching footsteps, even, cause great excitement in their movements, and recent experiments have proved them to be acutely sensitive to the vibrations of sound. By the physiologist a more pleasing spectacle can scarcely be witnessed than the graceful actions of these cetacea, as they swiftly pursue their course up and down their spacious tank, ascending to the surface of the water at intervals of fifteen or twenty seconds, to breathe, each inspiration being accompanied by a spasmodic sob-like sound, produced by the rush of air as a breath is rapidly liberated and inspired through the single central blow-hole.

Onward progress is effected in these animals, as in all other cetacea, exclusively by the action of the horizontal caudal fin; the development of muscle at the "wrist" of the tail on which this action depends being enormous and

plainly visible externally; the pectorals are devoted principally to the purpose of steering the creature to the right or left, aiding it also in rising to the surface of the water.

The fact alone of the porpoise suckling and evincing much maternal solicitude for the welfare of its young indicates the superiority of its position in the zoological scale above that of the other representatives of the finny tribe; and to this, in addition to the remarks just made upon their sagacity when feeding, many other facts may be cited, pointing in the same direction. The curiosity attributed to these creatures, as illustrated by the experiences of Mr. Mattieu Williams, receives ample confirmation from their habits in confinement. A new arrival is at once subjected to the most importunate attention, and, advancing from familiarity to contempt, if disapproved of, soon becomes the object of attack and persecution. A few dog-fish, *Acanthias* and *Mustelus*, three or four feet long, placed in the same tank, soon fell victims to their tyranny, the porpoises seizing them by their tails, and swimming off with and shaking them in a manner scarcely conducive to their comfort or dignified appearance, reminding the spectator of a large dog worrying a rat. The fine sturgeon, six feet long, now sharing an adjoining tank with the cod, was first placed with these animals, but in a short time was so persecuted that for safety it had to be removed; while to this day the lacerated condition of its tail bears witness to the pertinacious attention of its former comrades. Some large skate (*Raja clavata* and *maculata*), while they maintained their usual habit of lying sluggishly on the floor of the tank, escaped molestation; but no sooner did these fish display any unwonted activity than the porpoises were upon them, and, making a convenient handle of their characteristic attenuated tails, worried them incessantly. On one occasion I witnessed the two *Cetacea* acting evidently in concert against one of these unwieldy fish, the latter swimming close to the top of the water, and seeking momentary respite from its relentless enemies, by lifting its unfortunate caudal appendage high above its surface. It need scarcely be remarked that the skate were removed before further mischief could be done, leaving the porpoises, with the exception of a few conger, which during the day-time mostly lie hidden in the crevices of the rock-work, turtles, and a huge monk-fish (*Rhina squatina*) sole occupants of this colossal tank.

While far behind the porpoises in display of intellect, it may be hereafter shown that the representatives of the *Gadidae*, or cod-family, are by no means the least intelligent of fish.

W. SAVILLE KENT

AN INTERNATIONAL COINAGE

A PROPOSITION has been made for holding a private conference for an International Coinage at Vienna in the course of next September, and to consider more particularly the following points:—

1. The question of Valuation.
2. The principal Coins.
3. The Unit of Value, and its Sub-divisions.
4. The charge for Coining, the rate of alloy, and other technical questions.
5. The preservation of the full value of the principal Coins in circulation, and the coining of others.
6. The different modes of introducing a new money-system.

The prime mover and most active agent in the promotion of this conference is Mr. A. Eggers, Consul in Bremen. The declared object is to bring together a limited number of semi-official or private representatives of the various countries, with a view of a full discussion of the subject; and a committee has been constituted consisting of several French and German gentlemen who are interested in the question of the International Coinage.