

No. 1 appears to be from an old individual; the teeth have all been shed or broken away. No. 2 is the most robust specimen. The uppermost tooth has been shed and not replaced. The bone is not excavated in pits beneath the position of the contained teeth. No. 3 has the upper tooth shed and the bone perforated in its position. The lower three teeth are retained, but half worn away. In No. 4 the bone is perforated in the position of the upper shed tooth. In Nos. 5 and 6 the bone is perforated in the position of the upper shed tooth, and deep pits exist beneath the position of the two teeth below.

Since communicating the above, Prof. Hayden presented a specimen of a pharyngeal bone of the same fish from Castle Creek, Idaho.

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June 28th.

The President, DR. RUSCHENBERGER, in the Chair.

Thirteen members present.

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July 5th, 1870.

The President, DR. RUSCHENBERGER, in the Chair.

Fifteen members present.

The following papers were presented for publication :

“Remarks on Huxley’s Classification of Birds.” By T. Hale Streets.

“On the Stipules of Magnolia and Liriodendron.” By Thomas Meehan.

The resignation of Mr. Gilbert Coombs as a member was read and accepted.

MR. MEEHAN exhibited some specimens of *Rumex oblongifolius*, a naturalized Dock from Europe. He said that so far as he could ascertain from European specimens, and the descriptions of Babington, Bromfield and other English botanists, the plant was there hermaphrodite; but here, as correctly stated by Dr. Asa Gray, it was monœciously polygamous. He thought the fact that plants hermaphrodite in one country becoming unisexual in another, was worthy of more attention by those engaged in the study of the laws of sex than had been given to it. This *Rumex* did not stand alone; *R. crispus* and *R. patienta* exhibited the same thing. *Fragaria* was another instance well known to horticulturists, although the fact scientifically had not received due weight. The average tendency of the strawberry in Europe was to hermaphroditism,—here to produce pistillate forms.

He also called attention to the fact that in these American specimens unisexuality was in proportion to axial vigor. This law he had already explained in times past to the Academy, and new instances were scarcely necessary. Here, however, the moderately weak plant had more hermaphrodite flowers than the strong one; and in both classes of specimens the number of male flowers gradually increased with the weakening of the axis, until the ends of the raceme were almost wholly of male flowers. The first flowers on the strong verticels were usually wholly pistillate.

PROF. COPE inquired whether the facts now noted by Mr. Meehan did not conflict with those he had before brought to the notice of the Academy in coniferous plants? He understood that in them the female flowers were at the apex of the young shoots, and the male flowers in lower and more exterior positions.

MR. MEEHAN replied that the facts were identical in both instances in this, 1870.]

that the female flowers in coniferous plants were borne only on the strong vigorous shoots. These vigorous shoots would in time be crowded and weakened by shade, when they would cease to bear female, and produce male flowers only.

PROF. COPE suggested that, without reference to the relative vigor of the shoots, the male flower was below, and the female flower above; in these Docks the female flower was below, and the male above.

MR. MEEHAN said he had never placed any value on relative position, unless relative vigor went with it. In the case of coniferous trees,—*Pinus* particularly,—the male flowers were evidently partially formed the fall before expansion, and at the same time that bud scales were forming, and growth forces nearly at rest for the season. They were still in the weaker position, although appearing at the base.

PROF. LEIDY remarked that the interesting communication of Mr. Meehan had recalled to his mind a result of his experience, which he thought would accord with that of others,—viz.: that species viewed as common to both Europe and America frequently exhibit slight peculiarities, which are distinctive of those of the two countries. It is what might be inferred even if we admit the evolution of existing species from a common remote ancestry. A wide separation, with a considerable lapse of time and a modification of circumstances, are sufficient to account for the slight and acquired differences. Even where differences are not observed in form and structure, they may exist in the habit of the species. Thus the common wolf of Europe and America, viewed by many naturalists as of the same species, differs strikingly in character in the two countries. In the former it is a more fearless animal, not hesitating to attack man; in the latter, it is said never to attack man.

At an early period observers saw, or thought they saw, many of the same species of plants and animals indigenous to America that occur in Europe, and hence the common names of European species were applied to those of America. Gradually the list of species common to the two countries was much reduced, and now is comparatively small.

As might be anticipated, in descending in the scale the species common to the two countries become more frequent; nevertheless many of these common species exhibit geographical peculiarities, which by some naturalists would be regarded as sufficient to consider them distinct. The singular rotifers *Meliceria ringens* and *Limnias ceratophylli* are described by European authors as being most generally solitary. Here they frequently occur in compound bunches, up to several dozen in a bunch. Agassiz observes: "In the American Hydra, as in the European, there are two types,—the brown and the green. The American green Hydra, unlike the European, has the power of extending its body in a remarkable degree. Our brown Hydra has very short tentacles, while the European has long ones." Agassiz views the differences mentioned as characteristic of a difference of species, and names the American green Hydra *H. gracilis*, and the brown one *H. carnea*. Ayres indicates a brown Hydra, in California, which he says differs from the latter "in the same point and to about the same degree as *carnea* differs from *fusca*." He names this one *H. tenuis*. Whilst ready to admit the existence of the peculiarities in these different Hydræ, I do not feel so ready to regard them as distinctive of species, unless the principle is adopted of viewing each peculiarity in a plant or animal as distinctive of species. I have long been familiar with both green and brown Hydræ in the vicinity of Philadelphia, but I have not been able to satisfy myself that they are distinct from *Hydra viridis* and *H. fusca*, two of the four species usually indicated as found in Europe. Our brown Hydra is very common, and may be obtained on the under side of stones in the Delaware and Schuylkill, or on the submerged stems of plants. Though ordinarily its arms appear no longer or shorter than the body, I have seen them elongate after some days of rest in a glass vessel of water to three or four times the

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length of the body, which is about five lines. In one instance I saw a brown Hydra from the Schuylkill, the body of which was five lines in length, elongate its arms to nearly three inches. The green Hydra is found more especially on the under side of floating leaves in quiet ponds. It usually has five arms, though I have observed six, and more rarely seven; and this is also the case with the brown Hydra, which sometimes has but four arms. As in *H. viridis*, the arms of our green Hydra are shorter than the body.

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July 12th.

The President, DR. RUSCHENBERGER, in the Chair.

Ten members present.

PROF. LEIDY exhibited a fossil, submitted to his examination by the Smithsonian Institution. It consisted of a much mutilated portion of a ramus of the lower jaw of a large ruminant. The specimen, very friable and encrusted, was found 22 feet below the surface, in clay, on the "bench" or "second bottom" of Boyer River, Harrison Co., Iowa, and was presented to the Smiths. Inst. by D. R. Witter, of Woodbine, Iowa. Other bones were discovered in association with the specimen, but crumbled to pieces.

The jaw fragment was especially interesting, as it is supposed to belong to *Ovibos cavifrons*, and is the first specimen of a lower jaw yet discovered which may be attributed to that animal. It contains the last molar tooth nearly entire, but much worn. This tooth is constructed after the type of the corresponding one in the Sheep, and exhibits no trace of the accessory fold between the anterior and median pairs of lobes such as exists in the Ox, nor of a tubercle such as is found in the same position in the Deer. The fore and aft measurement of the crown of the tooth is full two inches; the width at the fore part of the crown is nearly an inch.

An isolated tooth, a last lower molar which had not yet protruded from the jaw, from Natchez, Mississippi, preserved in the Museum of the Academy, by comparison with the tooth in the jaw fragment, would appear to belong to the same animal. The specimen is two and a quarter inches long and three-fourths of an inch wide at the fore part, and is two inches in its antero-posterior measurement.

MR. T. HALE STREETS made the following remarks on the cranium of an owl:

Among the Academy's collection of birds' crania there is one belonging to a species of owl (supposed to be the *Nyctale acadica*), which presents a very remarkable instance of the want of symmetry in corresponding parts of opposite sides.

In this skull the squamous portion of the temporal bone is thin and scroll-like, and joins the post-frontal plate. What is interesting about it is the manner in which this union takes place. On the right side the lower end of the scroll-like squamous bone turns upward and forward, and unites with the post-frontal. On the left side the contrary to this is the case; the upper extremity of the bone curls over and joins the post-frontal, while the lower extremity is free.

If there had been but a single specimen of this cranium I would have been led to regard this instance of symmetry as abnormal; but as the same peculiarity of structure is presented by two (these being the only representatives of the species in the collection), it would rather suggest itself as a normal condition, although instances of coincidence of abnormality exist, especially in the lower forms of life.

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July 19th.

The President, DR. RUSCHENBERGER, in the Chair.

Fourteen members present.

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