

**A SINGULAR HABIT OF THE WOODCOCK.**

Among several curious habits of the woodcock, described by the editor of the *Zoologist*, its practice of carrying its young is perhaps the most interesting. The testimony of many competent witnesses is cited to corroborate the statement. The late L. Lloyd, in his "Scandinavian Adventures," wrote: "If, in shooting, you meet with a brood of woodcocks, and the young ones cannot fly, the old bird takes them separately between her feet, and flies from the dogs with a moaning cry."

The same author makes a similar statement in another work, this habit of the woodcock having been observed by a friend.

One of the brothers Stuart gives, in "Lays of the Deer Forest," a graphic account of the performance. He says: "As the nests are laid on dry ground, and often at a distance from moisture, in the latter case, as soon as the young are hatched, the old bird will sometimes carry them in her claws to the nearest spring or green stripe. In the same manner, when in danger, she will rescue those which she can lift; of this we have frequent opportunities for observation in Tarnaway. Various times when the hounds, in beating the ground, have come upon a brood, we have seen the old bird rise with the young one in her claws and carry it fifty or a hundred yards away; and if followed to the place where she pitched, she has repeated the transportation until too much harassed. In any sudden alarm she will act in the same way." Another method of transportation has been observed by Mr. Charles St. John, and described in his "Natural History and Sport in Moray." He says: "I found out that the old woodcock carries her young even when larger than a snipe, not in her claws, which seem quite incapable of holding up any weight, but by clasping the little bird tightly between her thighs, and so holding it tightly against her own body."

This narrator doubts the feasibility of any other mode of transport, and notwithstanding the confirmation of his report by other observers, it is probable that the method shown in the engraving is the one most commonly employed.

**The Cultivation of Carp.**

The Fish Commission have been distributing German carp throughout Kentucky, Missouri, and other Southern States. Professor Baird says that this fish bears about the same relation to the ordinary English carp that a North Carolina "pine woods" pig does to one of the Berkshire breed. In Germany the carp is esteemed as highly as the trout and sells for the same price in the market. The first successful introduction of these fish into the United States took place about three years ago. The experiment of breeding and raising them in the pond where they were then placed has been perfectly successful, the fecundity and rapid growth of the fish having been quite remarkable. Specimens hatched this year have already attained a length of seven inches. The carp lives on vegetable food, and thrives best in warm water; facts which make it peculiarly suitable for the South, and its qualities as a food fish will give it a high value in that section.

**Sponge Gathering around Key West.**

A Florida correspondent of the *Farmer and Fruit Grower* tells how sponges are gathered off Key West, in which waters, and along the Gulf coast of Florida, are the principal sponging grounds of the United States. The sponge schooners have two places for cleaning sponges, namely, Anclote Keys and Rock Island. The several varieties of sponges are classed according to their marketable value as "sheep wool," "yellow," "fox glove," "grass," etc., besides one class, the "loggerhead," which has no value, and is not thought worth picking up. The first named is the variety most sought, as it bears the best price. The most of the vessels engaged in the sponge trade are owned and fitted out at Key West. The outfit of a sponge schooner consists of a number of long poles with hooks fastened on the end for gathering; from three to seven small boats called "dingies," from seven to fifteen men—according to the number of boats—with provisions for from eight to twelve weeks; water-glasses, etc.

In sponging each dingy carries two men, with water-glasses, sponge hooks, and other necessities. While one man sculls the boat about, the other, lying across the boat's thwart with his head in the water-glass, scans the bottom for sponges. The water-glass is nothing but a common deep wooden pail, with a circular pane of glass for a bottom. Placing this upright in the water, and putting the head in far enough to exclude most of the light, one can easily see an object on the bottom in six or seven fathoms of water. The sponger directs the sculler how to go by waving his hand, and when in a desirable position he thrusts his long pole down and hooks his sponge.

The vessels usually remain out upon the bars from Monday until Friday evening of each week, coming into the Keys Friday night in order to clean the sponges gathered the week previous, put those gathered the current week into the crawls, put their wood and water on board, and prepare for

the next week. The freshly gathered sponges are put into crawls or pens, made by driving posts in the sand, where, at low water, they will be quite or almost dry. Here they are left until the next Saturday, to be washed by the tides. On the following Saturday they are cleansed by striking them one or two light blows with a paddle.

**NATURAL HISTORY NOTES.**

*A Single-toed Deer.*—The curious case of a breed of one-toed hogs brought to the notice of scientists some time ago by Dr. Elliott Coues, is paralleled, at least in an individual instance, by that of a one-toed deer, the four feet of which were recently presented to the California Academy of Science. Unfortunately the only parts sent were the metatarsals and toes, so that it would be difficult to be certain of the species, further than that it was a *Cervicoides*. The deer was killed in Mendocino County, Cal., but no information as to the existence or non-existence of others resembling it has yet been obtained. In all cases the third toe was the only one utilized for progression, but the extent of the development of the fourth toe differed in the respective feet.

*A Luminous Moss.*—Mr. J. Poisson gives in *La Nature* the following account of a moss which is met with quite frequently in the Pyrenees, and which is very puzzling to persons who are ignorant of natural history: The *Schistostega osmundacea* is a small moss with distichous and elegant foliage forming the type of a genus erected by Mohr at the be-



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ginning of the present century. Its botanical name is derived from two Greek words signifying "ruptured covering," in allusion to the fact that the operculum or lid which covers the urn or spore case tears instead of falling off in one entire piece. This humble plant has for a long time attracted the attention of botanists, and been a source of curiosity to tourists who frequent the Alps, the Pyrenees, etc., where are found many caves into which but little light penetrates, and in which the *Schistostega* finds congenial surroundings for its growth and development. In the very feeble light of these caves greenish-tinted luminous effects are observed which have been aptly likened to the sparklings of the emerald. It was at first thought that these were due to a phosphorescence emitted by the moss, but when Bridel published his "Bryologia Universa," in 1825, this theory had to be abandoned; for this distinguished student of mosses remarked that when the light was entirely shut off at the mouth of the cave in which the *Schistostega* grew the luminous effects disappeared. As a result of this observation it became evident that the phenomenon was due to reflection of light from the delicate cells filled with chlorophyl, composing the filaments that are seen at the base and in the vicinity of the little moss.

At the epoch in which Bridel wrote botany had not made that advance that it since has done, and so the distinguished bryologist naturally took these filaments which had the property of reflecting light for a new species of alga, and called it *Catopridium smaragdinum*. These filaments, however, were nothing else than the vegetative state of the moss itself—a state called by botanists the "prothallus" or "prothallus." When the spores of a moss germinate (if a thing can be said to "germinate" that contains no germ) they throw out a filament containing grains of green chlorophyl; then the filament divides into cells and gradually ramifies, and, after a certain length of time, varying with the species, this prothallus gives rise to buds, which take root, form stem and leaves, and become new moss plants. The latter state is the adult and perfect form of the plants. So, then, the moss called *Schistostega osmundacea* owes its luminous properties to the prothallus—its first vegetative stage. This prothallus is composed of septate filaments, which, by means of

their anatomical arrangement, store up the light that reaches them and reflect it again, just as a brilliant cut in facets reflects back in sparkling rays the light it receives, these rays being so much the more brilliant in a comparatively dark place.

*The Lowest Forms of Life.*—At a recent meeting of the Philadelphia Academy of Natural Sciences Dr. Leidy referred to the structure of the low forms of infusorial life known as the *Amaba*, upon a study of which, and allied creatures, he had been engaged for some time past. He said that the species of the true genus *Amaba* all possess a nucleus and contractile vesicle. He believed that the latter organ, if it may be so called, performed the function of a combined heart and lung, as currents of liquid were probably received and expelled by it. It would be remembered that a form of life still lower than the *Amaba* (inasmuch as it is devoid of a nucleus) had been described by Haeckel under the name of *Protamaba*. Recently Prof. Butschli had described an interesting species which he had found parasitic in the intestinal canal of the common cockroach. Dr. Leidy was glad to be able to confirm all of Butschli's statements concerning this curious little creature, which he had observed in the situation indicated. He believed, however, that it should be placed in a genus distinct from the *Amaba*, as it possessed permanent characters which placed it between that genus and the *Protamaba*. A distinct nucleus and nucleolus can be readily seen, but no trace of a contractile vesicle has, as yet, been discovered in it. In the typical *Amaba*, the protoplasm of which the animal is composed, divides itself into two portions—a clear outer film and granular contents. In the new form no such division of substance can be seen during life, although the two portions separate after death. These characters seemed sufficient to distinguish the creatures generically from those heretofore described, and Dr. Leidy therefore proposed for it the name of *Endamaba*, retaining the specific name *Blatte* proposed by Butschli. This rhizopod is of interest to the student of microscopic life, because of the ease with which it can always be obtained for examination, and because it forms probably the simplest and yet the most complete example of a living organic cell—a particle of protoplasm containing a nucleus and nucleolus and nothing else. In answer to a question, Dr. Leidy stated that it was commonly believed by those who studied infusorial life that all the forms containing chlorophyl gave off oxygen after the manner of plants. The belief was not founded merely upon the green color of the contents, but upon experiment. He did not think that this liberation of oxygen by animal matter was necessarily contrary to the logic of nature, because we have not been able to positively distinguish animal from vegetable life.

*The Jelly Glands of the Water Shield.*—Dr. J. Gibbons Hunt, in a paper read recently before the Philadelphia Academy of Natural Sciences, has described the apparatus which in the water shield (*Brasenia peltata*) excrete the

jelly which covers the submerged parts of the plant. These consist of special jelly glands covering all the submerged portions, and are not mentioned anywhere in the books. They are cylindrical in form, about 180th of an inch in length, growing out from and connected with special epidermal cells of oval form, which differ in contents and formation from the ordinary contiguous cells. These cells are filled with a dense and nearly transparent protoplasm, which throws out the jelly, apparently through the thin walls of the glands. The jelly from one gland touches and unites with that next it until the entire submerged parts become incased in a gelatinous garment. Dr. Hunt does not venture upon any theory as to the uses of this jelly in the economy of the plant—a subject that has puzzled botanists generally.

**The Wapiti.**

In his recent lecture before the Geographical Society, on Field Sports in America, Lord Dunraven pronounces the wapiti the handsomest by far of all the deer tribe. He says: He is called an elk in the States; why, I do not know, for the European elk is identical with the American moose, and a moose and a wapiti are not the least alike. But I presume the wapiti is called an elk for the same reason that thrushes are called robins and grouse partridges. The reason, I dare say, is a good one, but I do not know what it is. The wapiti enjoys a range extending from the Pacific seaboard to the Mississippi, and from the Northwest territory in British possessions down to Texas, and he formerly was found all the way across the continent and in the Eastern States. He is exactly like the European red deer, only about twice as large, carries magnificent antlers, and is altogether a glorious animal. Wapiti are to be met with in forests of timber, among the mountains, and on the treeless prairie. They are, I think, most numerous on the plains, but the finest specimens are found in timbered districts. One might suppose that branching antlers would cause inconvenience to an animal running through the tangle of a primeval forest, but the contrary appears to be the case, for in all countries the woodland deer carry far finer heads than the stags of the same species that range in open country.