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.

WOODCOCK CARRYING ITS YOUNG.

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 *Cariacus*. 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 beginning 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 "protonema" 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 *Amœba*, 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 *Amœba* 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 *Amœba* (inasmuch as it is devoid of a nucleus) had been described by Haeckel under the name of *Protamœba*. 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 *Amœba*, as it possessed permanent characters which placed it between that genus and the *Protamœba*. 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 *Amœba*, 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 *Endamœba*, retaining the specific name *Blattæ* 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.

Wapiti are very shy. They require quiet, and large, undisturbed pastures, and they are hunted with a thoughtless brutality that must shortly lead to their extermination in civilized districts.

Shad and Striped Bass in Lake Ontario.

Over five hundred shad, weighing from two to four pounds each, were taken during the past summer in white fish nets set in deep water off Sackett's Harbor, Lake Ontario. Seth Green, New York Superintendent of Fisheries, says that their stomachs were full of the common food of the lake, showing that they feed there. He has opened thousands of shad in the Hudson, Connecticut, and Potomac rivers, rarely finding anything in their stomachs. He thinks it probable that the Ontario shad have never been to salt water, that they have become land-locked, and will make the lake their home.

It is probable that another valuable salt water fish has also been able to thrive in Lake Ontario, namely the striped bass. About a year and a half ago Mr. Green placed a number of young bass in the Genesee river; and lately a female striped bass, thought to be one of the same lot, was taken in the Niagara river near Lewiston, the first ever taken in the tributaries of the Lake. The fish was well fed, weighed two pounds, and measured sixteen inches in length by nine in girth. Whether the fish will breed in the lake remains to be seen.

Sea Weeds as Food.

In a recent speech on the trade between Japan and Hong Kong, the English Governor of the latter port made some statements with regard to the use of sea weeds in China, which suggest the possibility of our neglecting a valuable source of food supply along our Atlantic coast. The profitable crop of "Irish" moss gathered annually from the rocks off Scituate, Massachusetts, may be but a small part of our resources in this direction. Governor Hennessey said: "I have been examining them (Japanese seaweeds) in the museums of the Kaitakushi both here and at Tokio, and it seemed as if I recognized familiar friends, for in the busiest streets of Hong Kong similar products are to be seen in bales and bundles with Japanese trade marks upon them. Your seaweeds have a high reputation in China for their succulence and nourishing qualities. From the statistical tables placed at my disposal by the Government, I find that in the year ended June 30, 1878, the quantity of Japanese seaweeds received in China through Hong Kong, and otherwise, amounted to 20,565,479 catties, valued at $456,366. Looking to the way that this article of food is produced and put upon the China market, and to the extraordinary demand for it in that empire of 400,000,000 of food consumers, it is not too much to say that its production and sale will be in almost direct proportion to the labor you can give it. Increase that labor fivefold, and the consumption of Japanese seaweeds in China will probably be increased fivefold. The night before last I experienced a new and not unpleasant sensation in eating some of your well-cooked seaweeds, and I am not surprised at the estimation in which the Chinese, a nation of cooks and gourmands, hold them."

The Salt Product of New York.

During 1878, the Onondaga Salt Works produced, in the aggregate, 7,126,197 bushels. Up to the middle of November this year, the yield was 7,276,062 bushels, and there is no doubt that the production of the entire year will be very near 9,000,000 bushels, an increase of almost 2,000,000 over last year, and nearly equal to the largest yield in the history of the trade. This year Onondaga salt brings $1 a barrel of five bushels in the West, against 70 to 80 cents last year, affording the manufacturer a fair but by no means large profit. There is a growing demand for salt for agricultural purposes, farmers having become convinced that as a fertilizer it is of great merit. In order to increase this demand, and to place the article in a position where it can compete with other composts, it has been suggested that the duty on this grade of salt, which is 35 cents per ton, be taken off. It is thought that if this were done an immense trade in this branch of the business would result.

During recent years the cost of producing salt has been materially reduced by burning pea or dust coal instead of ordinary lump coal. The coal dust is obtained at the mines comparatively free of cost, for it is mere refuse, and the larger share of the expense to the manufacturer is the transportation from the mines to the works. This coal dust is burned under a strong artificial draught furnished by blowers worked by small steam engines. It is now clearly demonstrated that salt can be produced at these works at so low a cost as successfully to meet home competition. No ingenuity, it is claimed, can reduce the cost of production low enough to compete with foreign manufacturers as long as the article comes over as ballast, almost duty free.

The Wheat Crop of 1879.

E. H. Walker, statistician of the New York Produce Exchange, after a careful estimate from authoritative reports, places the wheat crop of the United States for 1879 at about 425,000,000 bushels. The spring wheat crop will not be so large as was at first expected, that of Minnesota being no more than 28,000,000 bushels, instead of 40,000,000 as estimated early in the season. The amount consumed by 48,000,000 persons, plus the amount required for seed and other purposes, is placed at 250,000,000 bushels, leaving 175,000,000 bushels for export, 160,000,000 bushels for Europe, and 15,000,000 for other ports. The deficient wheat crop in Europe this year makes the demand there—provided the people are able to pay for so much—above 300,000,000 bushels, two-thirds of which will be required in France and the United Kingdom.

RECENT DECISIONS RELATING TO PATENTS, TRADE MARKS, ETC.

By the U. S. Circuit Court.

PAPER CAR WHEELS.

A case which promised to be of some importance as affording the means of a full discussion of the comparative merits of paper and iron car wheels, has just been decided in the United States Circuit Court at Philadelphia, by Judges McKennan and Butler. It appears that on November 1, 1876, Holloway, a brakeman of the North Pennsylvania Railroad, was killed in an accident caused by the tire coming off a paper car wheel under a Pullman palace car. The father of the deceased sued the Pullman Palace Car Company for damages, and it is this case which has just been decided by the court in favor of the defendant. The plaintiff contended that the paper wheels were unfit for use, and not as good as first class chilled iron wheels, and that the use of such paper wheels showed such gross negligence on the part of the Pullman Palace Company as made the latter liable for damages, though it was admitted that the paper wheels as now made by the Hudson Paper Car Wheel Company are safe.

After the plaintiff had rested the defendant asked for a non-suit, on the ground that the plaintiff had failed to make out a case, and that the testimony did not show any liability on the part of the Pullman Palace Car Company. The Court granted the non-suit, so that there was no argument on the comparative merits of paper and iron car wheels beyond that made by the counsel for the plaintiff in his opening. A motion was afterwards made to set aside the non-suit, on the ground that the car wheel company is also liable for injuries that might result from the negligent and defective construction of the car wheel, but the judges reiterated their decision, and a verdict in favor of the defendant was recorded.

R. N. Allen, Superintendent of the Hudson Paper Car Wheel Company, says that the wheel, the breakage of which caused the accident—the only one which has been traceable to such a cause—was manufactured twelve years ago by processes which have been greatly improved upon in the interval. The broken wheel had made a mileage of 200,000, and had not been properly inspected. Wheels of the same kind, made at the same time, have been in continual use since the accident, and are, after having made 350,000 miles, still in good condition.

By the U. S. Circuit Court—Eastern District of Wisconsin.

PLASTERERS' HAIR.—KING *vs.* TROSTEL *et al.*

The device covered by the following claim—"As an article of manufacture, the bale, B, of plasterers' hair, consisting of several bundles, A, containing a bushel each, by weight, inclosed or incased in paper bags or similar material, united, compressed, and secured to form a package, substantially as specified"—does not involve invention and is not patentable. Letters Patent No. 152,560, granted June 30, 1874, to Wendell R. King, are void.

DRUMMOND, *J.:*

This is a bill filed by the plaintiff against the defendants to restrain them from manufacturing and selling a kind of bale called "Plastering-hair Bale," which the plaintiff claims to belong to him by virtue of letters patent issued to him on the 30th day of June, 1874. The plaintiff invented, as he alleges, a peculiar method of putting up plastering hair in bales so as to constitute it an article of manufacture protected by the patent issued to him. He says in his specification that

"Heretofore plastering hair has been packed in a mass, or a certain number of bushels baled together, varying in amount as to the order required, so that when received the retail dealer was compelled to parcel out the same and weigh it to suit his customers."

Hair had been previously put up in large bags, barrels, or boxes, so that when it was called for by a customer, it had to be taken out of this large package, and, generally being more or less dirty, it was disagreeable to separate one part of the hair from another, and the plaintiff claims that he supplied a desideratum in the trade by putting it up in small parcels and tying or fastening them together so as to constitute what he termes a "bale." It is assumed that the hair is in a proper condition to be packed, and that being so, he describes his mode of packing. He says:

"I first place a bushel of hair in a paper sack, loosely, or only so far packed as may be readily done by hand. Several of these one bushel packages are then placed side by side in a baling press. I use for this purpose the baling press heretofore patented to me. They are thus compressed forcibly together, so that the bale produced will be a compact, firm bale, occupying only about one-fifth of the original bulk. The paper bags, which still envelop the individual bushels of the bale, keep said bushels separate, and serve at the same time to protect the hair."

He claims that when the hair is thus put up in bushels and fastened together in the mode designated, so as to form a bale, it constitutes an article of manufacture, the subject of a patent, and that it is a very convenient mode in which hair can be sold in small parcels, so as to meet a common demand upon dealers.

The claim at the end of the specifications is as follows:

"As an article of manufacture, the bale, B, of plasterers' hair, consisting of several bundles, A, containing a bushel each, by weight, inclosed or incased in paper bags or similar material, united, compressed, and secured to form a package, substantially as specified."

And the question is whether the plaintiff is entitled to a patent for putting plasterers' hair in packages and fastening them together in the manner described so as to constitute a bale. I am of the opinion that he is not. It is not necessary to decide in this case whether, taking the whole package together, compressed in a baling press which has been patented to him, as he states, it is such an article as the patent law protects, because I do not understand that the bale of the defendants, which is claimed to be an infringement of the plaintiff's patent, has been compressed in the same manner as the bale of the plaintiff, and therefore, strictly speaking, it is not the bale described by the plaintiff. If the plaintiff's patent is construed so as to include any mode of pressure by which the bale is formed out of small packages of plasterers' hair, as his counsel seems to claim, then I think the patent cannot be sustained; because a person can put most articles of merchandise in distinct and separate packages and then compress them together, and that would infringe the patent of the plaintiff, if the construction be as broad as has been intimated.

It may be true that this mode of putting up plasterers' hair has met a want in the trade, but, after all, independent of the particular mode of compression by the apparatus which the plaintiff speaks of in his specifications, it was nothing more than a method which any person might adopt, and which did not require any inventive skill. It is something which might occur to any person, to take almost any article of merchandise, put it in separate parcels, and bind them together. It is an exercise of the ordinary skill possessed by any person.

I had occasion some years ago to examine the principle involved in this case very fully in a bill filed to protect a package which was claimed to be a new article of manufacture for inclosing lard. There were many claims to that patent. All of the claims were rejected except one, which was sustained as a new article of manufacture. It appeared in that case that the article produced a revolution in the trade in lard, which was put up in such a way as to stand all climates, and so as it could be transported any distance without injury. With a good deal of hesitation and doubt as to the correctness of the ruling of the court in that case, one claim of the plaintiff's patent was sustained. The case never went to the Supreme Court, the parties having acquiesced in the decision of the court and settled their controversy.

I am not willing to go beyond that case, nor to encourage patents for such things as this, and to hold that nobody else can take plasterers' hair and make it up into small parcels and bind them together no matter how, and to say that any one who does this infringes the patent of the plaintiff.

By the Acting Commissioner of Patents.

ANTI-CHINESE TRADE MARK.—CIGAR MAKERS' ASSOCIATION OF THE PACIFIC COAST.

1. Where the purpose of an alleged trade mark is that of a symbol only, indicating the fact alone that those who employ it are members of a certain association, it is not a mark of trade such as is contemplated by the statute as proper matter for registration.

2. The avowed object of an association in the use of an alleged trade mark being to discourage the Chinese from manufacturing cigars, it has in view the restraint of trade, and is opposed to public policy, and the trade mark is, therefore, an unlawful one, which the Commissioner of Patents is expressly prohibited by statute from receiving and recording.

APPEAL FROM THE EXAMINER OF TRADE MARKS.—TRADE MARK.

DOOLITTLE, *Acting Commissioner:*

The applicants in this case consist of an association of individuals incorporated in the State of California, and engaged in the manufacture of cigars. They desire to register a trade mark which may be used by different members of the association. It consists of "a figure of a man in a sitting posture in front of a table covered with cigars and the implements of the cigar makers' trade."

The purpose of a trade mark is to distinguish the goods of one manufacturer from the same character of goods made by another; and if this trade mark were registered it would not have this effect, as it does not appear that the members of the association all manufacture the same goods, or propose to apply the mark to any particular kind. The purpose of the alleged trade mark appears to be that of a symbol only, indicating the fact *alone* that those who employ it are members of a certain association. It is, therefore, not a mark of trade, such as is contemplated by the statute as proper matter for registration.

Another objection to this proposed registration is, that it is not a lawful trademark, as it appears from the papers in the case that the avowed object of this association is to discourage the Chinese from manufacturing cigars. Such an object has in view the restraint of trade, and is opposed to public policy. The Commissioner of Patents is expressly prohibited by statute from receiving and recording "any proposed trade mark which is not and cannot become a lawful trademark." (Section 4939 Revised Statutes.)

The decision of the Examiner of Trade Marks is affirmed.