needed as a cover, was now turned back and pushed away, the opening thereby being considerably enlarged. More earth was subsequently placed over and around it, until it was completely hidden, and rendered useless. Before morning the true door had attained the necessary size, and the lining had been added to it; but the lining of the burrow was not entirely completed until some days later.

A piece cut from this door showed it to be a layer of earth with a single lining; while an old nest which came with the spider, and which she presumably made, was provided with a door having nine linings, each of the eight lower ones enclosing a rim of earth, by which the door had been enlarged.

MARY T. PALMER.

The destruction of birds.

In view of what has already been said regarding the manifold ways in which our wild birds are being effectually diminished, something more should be added in reference to a practice which has long prevailed in the southern tier of states, including Maryland. I refer to the systematic shooting of thousands of song-birds in spring and fall to satisfy a market demand. In the city of Baltimore alone the destruction of robins forms a periodic business of no little profit or extent. A visit to any of the large markets at the seasons specified, where they are a constant feature of the game-stalls, will verify this statement. Rice-birds (bobolinks, as we know them farther north), golden-winged woodpeckers, red-winged starlings, and cedar-birds (the last chiefly in winter) share a like fate.

Our complaint is directed against the destruction, for purposes of food, of one and all these species, but especially the robin. It may be legitimate to destroy the rice-bird and starling at the time and place of their devastation, but this does not sanction their slaughter in districts where rice does not grow, and the species are beneficial to crops. If practical ornithologists are not wholly in the wrong, it is neither wise nor legitimate to destroy the robin under any circumstances. The robin nests familiarly in and about gardens and orchards in large numbers when unmolested, rearing two and sometimes three broods, of four or five young each, in the season; and although he makes raids oftentimes into the strawberries, cherries, and other small fruits, it is a cheap toll for the incalculable services which he has previously rendered. Instead, however, of being protected by laws generally prevalent, they are but partially protected during their breeding-season in the north, to be killed on the spring and fall migrations.

Notwithstanding the great productiveness of a species, its numbers must be very materially diminished by the thousands, and probably tens of thousands, annually shot down for the market. It should also be remembered that the destruction of these birds in spring is particularly fatal, since with each pair thus killed we kill the possible young of the same year.

The human and brute enemies of the birds have been amply alluded to, but I have seen no reference to the trade in skins and eggs which has rapidly grown up in the past few years. In obscure corners of most cities of considerable size, persons may be found who deal in birds' skins and eggs, old coins, postage-stamps, and various other specialties, conducting a largely juvenile trade through the post. Their bulletins are now sown broadcast, especially among the boys' boarding-schools of the country. They offer tempting exchanges, premiums in eggs to the largest buyer, and give the price of eggs singly or in 'sets.' In most cases there is no identification, no date or locality given, so that the scientific value is usually lost. With such educating influences as these, how can we expect the thoughtless small boy, and better class of older boys at schools, to regard egg-nesting as any thing more than harmless employment, to be carried on as extensively as that of stamp-collecting, only with much less method? In framing laws to protect the birds, would it not be well to prohibit the sale of their eggs and skins for all such amateur and pseudo-scientific purposes?

Furthermore, with all these human and brute enemies with which our native birds have to contend, what possible excuse can be found for adding a still more deadly and effectual agent, — the business-like slaughter of useful species for food? If, indeed, the game-market was understocked, other birds might be had which are not to be commended as highly for either song or utility.

People who encourage this kind of traffic, in respect to the robin at least, are either thoughtlessly or wilfully robbing our lawns and orchards of one of its heartiest and most cheerful songsters, and agriculture of an indispensable friend and ally. F. H. H.

Baltimore, March 1.

In a recent number of the Indianapolis *Times* there appeared an article on bird destruction, containing the following extracts given by a well-known taxidermist of that city. They will not only serve as additional evidence of the destruction of birds for personal adornment, but also bring into notice, in this regard, a portion of our country which has not yet been mentioned, and will give the evidence of one who should be posted concerning that which he tells.

"It is a very inexpensive and simple thing to mount birds for millinery purposes, and the number who can engage in it is so large that no county in the state is free from the ornithological murderer. If the present rate of destruction is continued, which is equivalent to saying that if the fashion in millinery does not change, the state will be depopulated of its birds in five years. I have lately spent whole days in the woods without seeing a bird, except the unspeakable sparrow. Last year there were shipped from this city 5,000 bird-skins collected from the Ohio valley, chiefly from Indiana. Now, suppose that half of these birds were females: they would lay, on an average, five eggs each in a season, — a total of 12,500 eggs. Of these, 10.000 probably would hatch. Added to the 5,000 birds killed, here is represented a yearly destruction of 15,000 birds, — a sacrifice to fashion.

"It is important to note that this represents only the slaughter of the fashionable birds. Styles change. A year ago blackbirds for women's hats were in great demand, and thousands of them were killed. Now there is no market for blackbirds. Each of the 5,000 birds sent out of the state during the year 1885 was in style; that is, was either a jay, yellow-hammer, cedar-bird, or an owl. These birds are shot and skinned, and the skins allowed to dry before shipment. One man to whom I sent birds this week shipped 75,000 skins of American birds to France, and each year he duplicates this shipment. But the most of the American birds are sold at home. They are sent to the Long Island factories, where the skins

are steamed until pliable, when they are dressed and colored. Often the small, cheap birds are cut up, and the parts patched together in imitation of some pretentious songster. The dyeing is a secret process; and the birds are so manipulated, that often a Hoosier jay is palmed off as the rarest warbler of the tropics. This year, owls promise to become popular west. East they are already worn by the leaders of fashion. You may look for them upon the streets here soon.

"The profits of this business are very large. The Indianapolis collectors pay from seven to twenty-five cents each for the skins of jays and yellow-hammers, and from twenty-five cents to a dollar for owls. An expert skinner can prepare from fifteen to twenty-five an hour; and, if birds are easily found, he easily, therefore, makes money at the business. Prepared for the milliners, the birds (exclusive of owls) cost, on an average, from twenty-five to forty cents: they are sold to milliners at from a dollar to a dollar and a half, and the milliners retail them at two dollars and three dollars and a half. At the factories cheap labor is employed. Girls at two dollars and three dollars a week are competent to do all that is required in preparing the birds for use."

There are some statements in the above which I doubt; but, having no statistics to the contrary at hand, I have given them without comment.

The law of Indiana for the protection of its song-birds is farcical in its language, and is rarely enforced. It enumerates the species which are intended to be protected; but so many English birds are included, that one is forced to smile at the very thought of it.

AMOS W. BUTLER.

Brookville, Ind., March 1.

A recent ice-storm.

I think that the answer given by Mr. Philbrick (*Science*, vii. 220), concerning the injury done to trees during the ice-storm of Feb. 11–13, is hardly sufficient to account for the facts. So far as I have been able to learn, the damage was most severe in localities along the coast, north of Boston. In this immediate vicinity the mutilation was excessive. The poplars suffered by far the most, and the elms sustained nearly as great injury, and after them would come the red-oaks, pitch-pines, maples, and white-pines. The birches were little affected, and the apples and horse-chestnuts not at all. In some cases the poplar trunks were left nearly bare. The uppermost limbs of the elms sustained greater injury than those lower down, as Mr. Davis indicated. I attribute that mainly to their position. They caught and held so much of the rain, as it fell, that the accumulation of ice was much less on the branches beneath. My observations have not shown much splitting at the point of bifurcation. A careful examination of an extensive area has shown that most of the broken limbs of the elms were twisted off, with splintering of the wood for several inches, and only occasionally one was found which had been broken off squarely. It seems clear that this result was brought about by a want of symmetry in the horizontal subdivisions of the branches. When such branches were well loaded with ice, gravity not only bent them downwards, but also produced a considerable torsional effect at a point usually quite near their union with the trunk. The apples and the horse-chestnuts seem to have escaped by reason of the fewness of their small limbs.

L. A. LEE.

Bowdoin college, Brunswick, Me., March 6.

Apropos to Pteranodon and Homo.

Professor Holder's explanation that the human figure was simply put with Pteranodon for the sake of comparison of size, reminds me that some years ago I got from the cretaceous deposit of my neighborhood enough fossil material to diagnose a new species of reptile, which, although with powerful paddles, was almost pythonic in structure, and warranted the belief that the animal was hardly less than twenty-five feet long. As an Irish digger had struck upon the relics, and the too general habit is to destroy rather than save these finds, I succeeded in enthusing the laborers by drawing a restoration of this 'sea-serpent,' to their amazement. This the boss digger had framed and suspended in his cottage. To my sorrow, the thing made me famous, for it became so much talked about that reporters came from the great city. A pictorial journal sent an artist, who borrowed my crude sketch, and elaborated it under his own conceptions. Judge of my surprise when, with full credit to my name, the said journal appeared with an account of the resurrected ancient sea-serpent, and an engraving of the same, sporting in the ocean, and in the distance a three-masted ship in full sail! As in Professor Holder's case, there was no explanation given that the ship "was introduced in the cut to give people some idea of the size of the animal."

SAMUEL LOCKWOOD.

Freehold, N.J., March 5.

Is the dodo an extinct bird?

Has the guardianship of the 'mysteries of theosophy,' or his concern for the social organism of the world, lest they escape him (see Washington *Weekly star*, Nov. 20, 1885), so far rendered my aged friend, Dr. Coues, insensible to the progress of American ornithology, or current ornithological literature, as to have him overlook the fact, that, twenty days previous to my propounding the above question in *Science*, I had said in the *Century magazine*, "Of all the birds extirpated within the last few centuries, none can claim an equal share of interest with the famous dodo" (January, 1886)?

Since I published my opinion in the *Century*, many, many people — not naturalists, but those who take interest in such things — have asked me whether science was absolutely certain of the extinction of the dodo, as many quite recent popular works upon natural history have it that it may still be found in Madagascar. It was for these estimable people that I asked the question in *Science;* and fortunate indeed are they, that it has been answered for them by one of the leading ornithologists of this country, and in whose opinion, upon this point at least, I have most certainly always concurred.

R. W. SHUFELDT.

Fort Wingate, N. Mex., Feb. 25.

Chinook winds.

Warm west winds answering to the 'Chinook' winds occur as far south as southern Colorado, though I have seldom heard the name 'Chinook' applied to them in this region. They are here often called Pacific winds, also 'snow-eaters' and 'zephyrs.' They are the most violent winds we have at this place, as we are sheltered from the northers.

G. H. STONE.

Colorado Springs.