

TWO-STORY BIRDS' NESTS.

BY DANIEL C. BEARD.

While the expanding leaves of tree and shrub retain the tender tints of pink, and the broad lily pads commence to mosaic the surface of the ponds with green, in perfect harmony with the bursting bud and opening flower comes the summer yellowbird, and from hedge and bush may be heard his song, as simple and pleasing as the tasteful but modest plumage that covers his little person. Almost immediately after the first appearance of these industrious little birds they commence their preparations for housekeeping. The male bird flies busily about selecting such material as feathers, plants, fibers, the furze from ferns, the catkins from willows, and other similar objects, all of which he brings to his mate, who arranges and fashions their delicate nest. So quickly and deftly do this little couple labor that they build the greater part of their house in a single day.

There is often a third party interested in the construction of this nest, a homeless, happy-go-lucky Bohemian bird, who has a sort of tramp's interest in the housekeeping arrangements of most of the smaller feathered denizens of copse and woods. This is the well-known cow blackbird, who disdains to shackle her freedom with the care of a family, and shifts a mother's responsibility by farming her progeny out, while she seeks the incongruous but apparently congenial companionship of the cattle, with whom she appears to be on the most intimate terms.

The cow blackbird deposits its eggs indiscriminately among the nests of smaller birds. The blackbird's eggs generally hatch out a day or two before the adopted mother's own eggs, so, when the legitimate members of the family do come, it is to find their nest already occupied by the strong, lusty interlopers, who, on account of their superior size and strength, come in for the lion's share of all the food brought to the nest. Thus the innocent parents rear the aliens, while their own young starve. It is really a pitiable sight to see a couple of little greenlets anxiously searching from daybreak till evening for food to fill the capacious crop of one or more young cow blackbirds, considerably larger than the greenlets themselves.

The summer yellowbird, though confiding little creatures, are not readily duped or imposed upon. Their instinct is sufficiently near reason for them to detect the difference between their own little fragile, prettily-marked, greenish-colored eggs and the great dark-colored ones the vagabond cow blackbird has surreptitiously smuggled into the cozy nest. The domestic little couple cling to the spot selected for their house and will not leave it, neither will they hatch the obnoxious eggs, which they are apparently unable to throw out; but the difficulty is soon surmounted, and so are the gratuitous eggs, for the indefatigable workers proceed at once to cover up the cow blackbird's eggs, constructing a new nest on top of the old one, building a second story, as it were, to their house.

Last summer Mr. Lang Gibson brought me one of these two-story nests which he found at Flushing, L. I.; the lower nest contained two cow blackbird's eggs, and the upper one three eggs of the summer yellowbird. Gibson watched the construction of the nest. Visiting it again after it was finished, he discovered the egg of a cow blackbird. Next day two of these eggs occupy the nest. Some time afterward, to his surprise, he found the nest contained three eggs of the yellowbird and no signs of the existence of those deposited by the blackbird, but the nest had the appearance of being much taller than at first, and an examination disclosed the true facts of the case.

The accompanying illustration was drawn by the writer from this compound nest. The upper story or nest is partly lifted so as to show the cow blackbird's eggs in the nest below.

Fig. 1 shows the cow blackbird's egg, and Fig. 2 the yellowbird's egg. These are drawn exactly the size of nature.

Mr. Nuttall was the first naturalist, I believe, to record the observation of these two-story nests. Baird mentions a three-story nest, each of the lower nests containing the eggs of the cow blackbird, the whole structure being seven inches high.

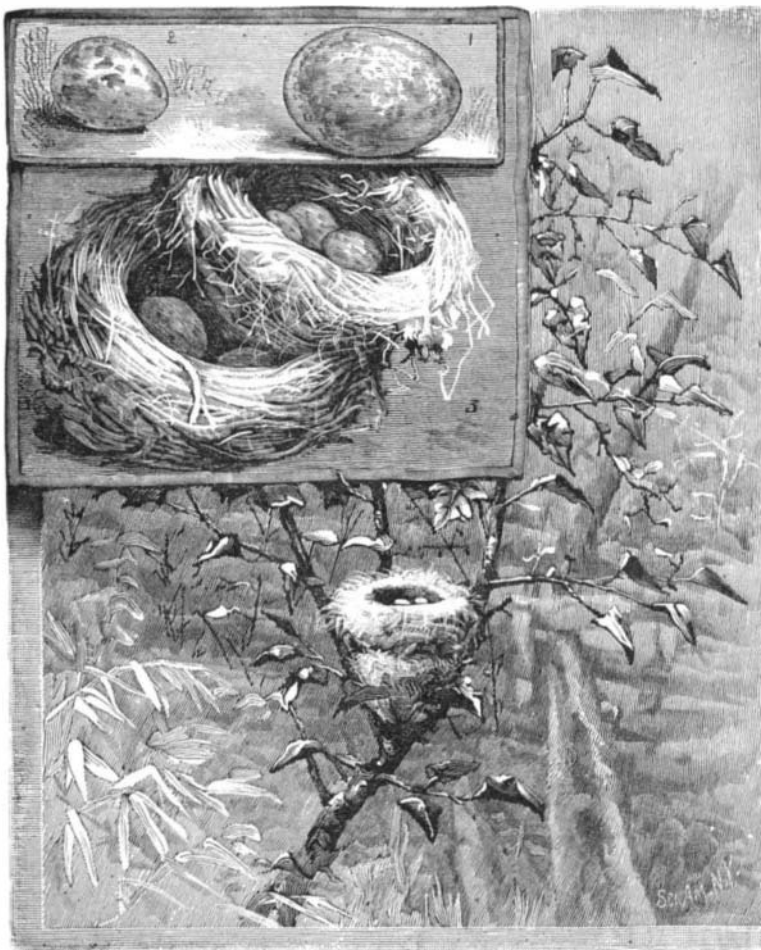
Asiatic Tribes in North America.

From the Proceedings of the Canadian Institute, we are in receipt of a brochure of thirty-eight pages from the pen of Professor John Campbell, on the Asiatic Tribes of North America. In this the author indicates the origin of three Indian families: the Tinnah or Athabascans, the Iroquois, and the Choctaws. The Tinnah family are associated with the Tungusians of Siberia and Northern China, and the Iroquois and Choctaws (who with the Cherokees are simply disguised Iroquois) with the populations of Northeastern Asia, classed by Dr. Latham as Peninsular Mongolids. With respect to the Tinnah, Professor Campbell, at the close of his argument, remarks: "Certainly, no two families representing the Old World and the New present closer affinities in name, vocabulary, grammar, physical appearance, dress, arts, manners, and customs, than do the Tungus of Asia and the Tinnah of America."

Under the term Choctaw is included the entire Muscogee family, together with the Cherokees, the Choctaws representing the Tchuktchi or Tshkets, and the Cherokees the Koriaks or Koraeki. The Tuscaroras of the South are taken as the oldest and purest form of the Wyandot-Iroquois, and through them the last named family are brought into relationship with the Choctaw-Cherokees, and by this path with the Koriaks in Northeastern Asia.—*Amer. Naturalist*.

The Composition of Human Fat.

Dr. Lebedeff, of Moscow, has contributed a short memoir to Hoppe-Seyler's *Zeitschrift für Physiologische Chemie*, on the subject of the metabolism of fat in the body, in the course of which he takes occasion to give the results of his observation on the composition of human fat, a point that, singularly enough, does not appear to have received attention from any observer. Chevreul indeed examined the melting point of the fat of man, and found the panniculus adiposus melted at from 20° to 22° C., and set or solidified at from 12° to 15° C., and Lerch noticed that capronic acid existed in human fat, but there are very few, if any, other observations. Lebedeff states that fat from various regions of the body presents differences, but they are only slight in degree. Its color is yellowish or brownish. At ordinary temperatures it is rather hard, or semi-solid, and destitute of smell. It dissolves with difficulty in cold alcohol. Its specific gravity is always less than 1°. The fat obtained from the subcutaneous connective tissue contained in one case 80 per



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cent of oleic acid, and 16.7 per cent of solid acids, that is, palmitic and stearic acids; in another case 78.6 per cent of the former and 14.7 of the latter acid. Fat from the abdomen contained in one case 74.4 per cent of oleic acid, and 22 per cent of palmitic and stearic acids, in a second 76.6 per cent of oleic acid, and 20.9 per cent of palmitic and stearic acids.

Brunelli Process of Embalming.

The process of embalming is as follows, and is called the "Brunelli process": 1. The circulatory system is cleansed by washing with cold water till it issues quite clear from the body. This may occupy from two to five hours. 2. Alcohol is injected so as to abstract as much water as possible. This occupies about a quarter of an hour. 3. Ether is then injected to abstract the fatty matter. This occupies from two to ten hours. 4. A strong solution of tannin is then injected. This occupies for imbibition two to ten hours. 5. The body is then dried in a current of warm air passed over heated chloride of calcium. This may occupy two to five hours. The body is then perfectly preserved, and resists decay. The Italians exhibit specimens which are as hard as stone, retain the shape perfectly, and are equal to the best wax models. It will be observed in this process that those substances most prone to decay are removed, and the remaining portions are converted by the tannin into a substance resembling leather.

Fall of Bald Mountain.

A large section of Bald Mountain, North Carolina, near Bakersville, is said to have fallen into the valley February 13. The rumbling noise preceding the crash was heard for miles. The cause of the fall is uncertain; probably the recent heavy rain and snow storms have had something to

do with it. A smaller landslide, four years ago, gave rise to local fears of a volcanic eruption. The fallen part of the peak is described as a "slice half a mile square."

Norwegian Fish Guano.

British Consul-General Crowe remarks, in his report upon the trade and industries of Norway, that a large business is rapidly springing up in the manufacture of fish guano, and that the heads, bones, and refuse of all kinds of fish, which a few years ago were wasted, are now advantageously utilized in the manufacture of this article. The first factory was established for making this kind of guano in Lofoden about 1860, and since then their number has increased from time to time. The Norwegian fish guano is made by grinding fish offal, composed chiefly of heads and bones of the cod, or *gadus morrhua*, which are collected during the large cod fisheries. The heads and backbones are removed previous to curing, and the following substances are likewise used in the manufacture of guano: damaged dried fish, dried and split codfish damaged by sea water, berring heads, damaged herrings, all kinds of fresh fish, and flesh of whales and Greenland sharks; but the different descriptions of raw materials used require a different mode of preparation. The Norwegian manufacturers make their guano almost exclusively from the heads and spines of the codfish, while offal from herrings and soft parts of cod and other fish are but seldom utilized for this purpose, as the expense of producing guano from the latter substance is greater and the product of an inferior quality. The manure which originally appeared for sale under the name of Norwegian fish guano was made exclusively of the first-named substances, and, according to chemical analysis, is composed of the following elements: Water, 13 per cent; organic substances (of which 8 per cent is nitrogen, and 7.6 per cent ammonia), 49.3 per cent, and inorganic substances (of which 14.9 per cent is phosphoric acid), 37.7 per cent. This larger proportion of fertilizing agents has led to its being held in such high favor in the agricultural markets. It is manufactured as follows: The heads and bones of the fish are collected at the fishing places and dried on the hills in the open air, before putrefaction sets in, the heads being tied in bundles of twenty each, and the bones carefully separated. After having been sufficiently dried, so as to be no longer exposed to the risk of putrefaction, they are carried into the manufactory, where they are cut into small pieces, thoroughly dried on plates in a kiln, and crushed, all by means of machines especially constructed for this purpose; finally, the mass is ground between large millstones to the fineness of common flour. The heads and bones are crushed separately, but mixed together during the grinding process. As a rule, one sack, containing 204 pounds of bones, is mixed up with five sacks of heads; this turns out the best result. When guano is to be produced from damaged salt fish and herrings, the mode of manufacture is different, as the fish is not capable of being dried when containing salt, which must be previously removed. This is effected by means of a cylindric caldron of iron, furnished with the necessary cranes and openings, for filling in and taking out the raw material; after that the cylinder is filled, steam is led into the bottom of the same from a boiler, and the mass exposed to a pressure of 30 pounds for about half an hour, sufficient to separate the salt, which runs off

through a channel in the cylinder. The mass is then taken out, dried in the kiln, and crushed and ground in the manner above described.

Fat is a similar hinderance to drying the raw material. When guano, therefore, is to be produced from herrings, or flesh of whales, Greenland sharks, etc., the mode of manufacture is the same as in the case of salt fish, the fat being extracted by means of steam pressure, after which the mass is easily dried and ground. Guano of herring heads is manufactured in the same way as cod offal, the raw material being simply dried and ground; but this guano is of an inferior quality. As the quality of this manufacture depends very much upon the kiln, great attention is always paid to see that it is a thoroughly good one, as when the mass is well dried, the crushing and grinding is more easily and perfectly effected; if, on the other hand, the kiln is not a good one, it will cake together when ground, and yield a rough and fibrous product.

All the Norwegian manufactories are situated in Lofoden and Finmark, where the raw material can be procured cheaply and abundantly, and where the first drying process is easily effected in the peculiarly dry air of the northern regions. The consumption of cods' heads for the manufacture of guano is, on the average, about 16,000,000 per annum.

Consul Crowe states there is reason to believe that the utilization of the offal from the fisheries will be carried on to a much greater extent than hitherto, a Swedish engineer, M. Sahlström, having recently made some very important discoveries in this branch of industry. Among the articles to be produced, the inventor first mentions albumen, which is to be prepared from fish spawn. The annual yield of the latter amounts to about 50,000 barrels, which at the present value represents about £125,000, but if worked into albumen the value would be at least £305,000.