at the same time it is the proper function of the geodetic survey. We are informed by Major Powell that he makes use of all the coast-survey results so far as they are available, but he does not indicate what fraction of his labor is thus saved; and it goes without saying, that he has no authority, directly or indirectly, to require that the coast and geodetic survey shall do any thing which he may want done.

Among the suggestions made by Major Powell was one that all the scientific bureaus should be placed under the general direction of the regents of the Smithsonian institution. This does not appear to have been considered practicable, and was not further urged by the director himself. One of the possible plans is to place all these bureaus under the interior department. The principal objection to this course is that that department is already overloaded with work, so that its head could not give the proper consideration to the subject. Yet this is the simplest course, and would certainly be an improvement on the present state of things. The more effective course would be to form a separate department of science and public works. To this there seems to be no positive and serious obstacle, except the difficulty of getting any measure of the sort enacted into a law. The question whether the head of the department should be a scientific expert or a public administrator, is an ulterior one, which need not be discussed at present. In the latter case, the question of its being regarded as a cabinet office would arise. There will be little hesitation in deciding this question in the negative.

In a future number we hope to discuss other testimony taken before the commission, and the proposition which appeared in the supplement to our last number.

THE BOTTLE-NOSE DOLPHIN, TURSIOPS TURSIO, AS SEEN AT CAPE MAY, NEW JERSEY.

This is the commonest dolphin on our Atlantic coast, occurring from Greenland to at least as far south as Florida; and Professor Flower is inclined to believe that it is cosmopolitan. The dolphins are very abundant along the shore of New Jersey, passing and re-passing close to the beach in schools of greater or less magnitude. The fishermen state that they usually pass around Cape May City into Delaware Bay upon the rising tide. Their movements would appear to be somewhat uncertain, however; for we lay all the morning at Hereford Inlet, expecting to see them approach from Seven-mile beach, and failed, but found them in the afternoon at Cape May point, from which we had started. It seems probable that they come into Delaware Bay from the southwest.

The school surrounded at Cape May point apparently comprised about thirty individuals. They showed no fear at the approach of the steamer. Upon striking against the large net in which they were impounded, they showed no disposition to leap over it, but attempted to make their escape by diving. Observations on this point, however, were brought to a speedy close from the fact that three specimens, becoming entangled in the net, rolled it up from the bottom, and thus allowed the remainder of the school to make their escape.

All the three specimens secured were females: two were adult, about two hundred and sixty centimetres in length, and the third a young animal about a hundred and twenty centimetres in length. On compressing the sides of one of the larger specimens, milk issued in a fine stream from the mammae. When collected in a bottle, it appeared of the color and consistency of cream, was without perceptible odor, and possessed the flavor of cocoanut-milk.

I placed some in a bottle to bring to Washington for analysis, but it soured in transportation on account of the warmth of the weather, and forced out the cork. The fishermen stated that the specimen which furnished the milk was followed about by the younger animal. Although I was not near enough to verify this observation, it seems to me very plausible. The teeth of the calf were barely visible above the gums, and it showed other signs of youth. I am inclined to believe that it was born in the spring of 1884, and that the time of weaning was not far distant when it met its death.

Upon opening the abdomen of the second adult specimen, we found a foetus about twelve centimetres in length. The stomach of both adults contained simply a few bones and one or two skulls of a fish which appeared to be

the common gurnard (Prionotus carolinus). The specimens having been drowned, the lungs were filled with water. The fishermen state that this species cannot remain under water more than four or five minutes.

The color of the back in the specimens secured was a light plumbeous tint. It shaded rather suddenly at the middle of the sides into the pure white of the under parts. I was informed that the depth of the color of the back varied considerably in different specimens, and it deepens very rapidly as soon as life is extinct, especially if the specimens lie in the sun.

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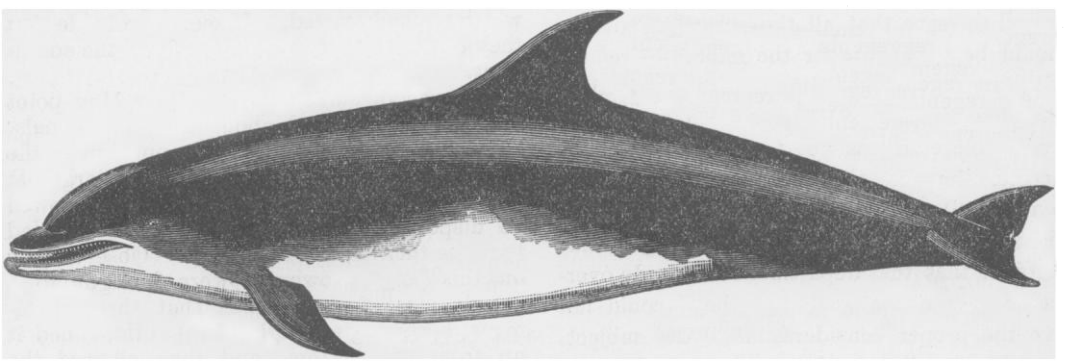

THE BOTTLE-NOSE DOLPHIN, TURSIOPS TURSIO (AFTER FLOWER).

BUTTER.

THE work of the U. S. bureau of agricultural chemistry shows that the percentage of water in a good butter should not exceed twelve. In thirty-four analyses the highest percentage of water found was 14.51, and the lowest 7.34. It is naturally in the interest of the seller to incorporate as much water as possible in the butter. But, if all butter should be legally condemned which should contain more than ten per cent water, the tendency to 'underwork' the butter would be speedily corrected. In one instance a report of an analysis of foreign butter gave a percentage of water of 35.12. The quantity of salt in a butter should depend solely on the taste of the consumer. I doubt very much whether the addition of a few per cent of salt helps preserve the butter. It is therefore a condiment only. In eighty-four analyses the highest percentage of salt found was 6.15, and the lowest 1.08. Two per cent is a fair mean of the salt usually present. Much butter is now made without any salt at all, and the use of such butter is rapidly increasing. Salt is cheaper than butter, and there is therefore a tendency to use it to the maximum endurable by the eater. But butter without salt will hold more water; and, as soon as this fact is generally known, sweet, moist butter will be more common than the dry, salt article. It would be a good thing if all the caseine could be washed out of the butter, but this is impracticable. Albuminous bodies decay more easily than all others, and butter with a great deal of curd in it is very hard to keep sweet. Of all the constituents of butter, this is the most difficult to estimate. Oleomargarine butters contain no curd, unless they have been churned with milk, and even then not a great deal. If butters do not have more than one per cent of curd, they may be accepted as having been properly prepared. Owing to the difficulty of estimating it, however, the quantity present should not be taken as a test of purity.

The fat of genuine butter is heavier than that of tallow, lard, or any of the common fats used as butter adulterants. Its specific gravity is about 912, water at the same temperature being taken at 1,000. The relative weight of tallow or lard often falls below 900. In analyses of commercial oleomargarine I have found the highest density to be 905. Of butter-fats in thirty analyses the maximum was 912.5, and the minimum 908.6. There should be grave doubt of the purity of a butter, if the specific gravity of the fat should fall below 909. For this reason the specific gravity of a butter-fat, if it be properly taken, is almost a certain test of its genuineness. The process is, however, a tedious one, and requires the greatest care and delicacy in manipulation.