

THE TURBOT, GOLDBUTT, AND SOLE.

The scientific name of the flat fishes, as they are popularly called, is *Pleuronectida*, signifying "side swimmers." The upper side of these fishes is always dark, and the under side white; this guards them against the attacks of their enemies, the dark flat surface looking like the sand on which they love to creep. When swimming, they undulate through the water in a very graceful manner. "If the eyes were placed as is customary in fishes, one of them would be useless as long as the fish was lying on its side. By a modification of the bones of the head both of the eyes are brought to that side which remains uppermost, and they are thereby enabled to command a wide view around."

The turbot (*Pleuronectes maximus*) is the most highly valued of the flat fishes for the delicacy of its flesh. Its color on the left side is brown of various shades, lighter on the fins, and the whole of this side is spotted with round bony tubercles; the other side is white. The length of this fish is more than a meter; the weight, about thirty-five kilogrammes. Rondelet asserts that he has seen a turbot three meters long, two broad, and almost a meter thick. It is found in the German Ocean and the Baltic Sea, also in the Mediterranean. It is caught in the greatest abundance in the German Ocean.

Under the name *Platessa* may be found the species of fish with four cornered or egg-shaped bodies. The eyes and the color, as a rule, are upon the right side, but reversed specimens are quite common.

The goldbutt belongs to this family. Its length sel-

come accustomed to the vessels in which they are kept, learn to know those who care for them and their feeding time, and will often take their food from the hand. The turbot feeds upon mollusks and crustaceans, besides fish. — *From Brehm's Animal Life*

NATURAL HISTORY NOTES.

The Flowering Plants of the World.—"The Genera Plantarum" of Bentham and Hooker, just completed, gives a rough approximation of the number of plants that compose the present phanerogamic flora of the world, according to the authors' own ideas, and according to the ideas of the writers. From this it appears that the polypetalæ comprise 30,966 species; the gamopetalæ, 34,567; the monoclamydeæ, 11,778; the gymnospermæ, 415; and the monocotyledones, 17,894. Total number of flowering plants, 95,620 species.

This "number is, of course, but a very rough estimate," says the *Gardeners' Chronicle*, "but the above is the number computed by taking the lowest number given under each order by the authors as being what they consider the probable number of species contained in it according to their view, though probably this number is not always intended as an accurate census even of their own views; and, if the estimate of other authors were taken into the count, the total number would be considerably augmented." Some of the largest orders are: compositæ, with 9,820 species; leguminosæ, with 6,504 species; orchideæ, with from 4,500 to

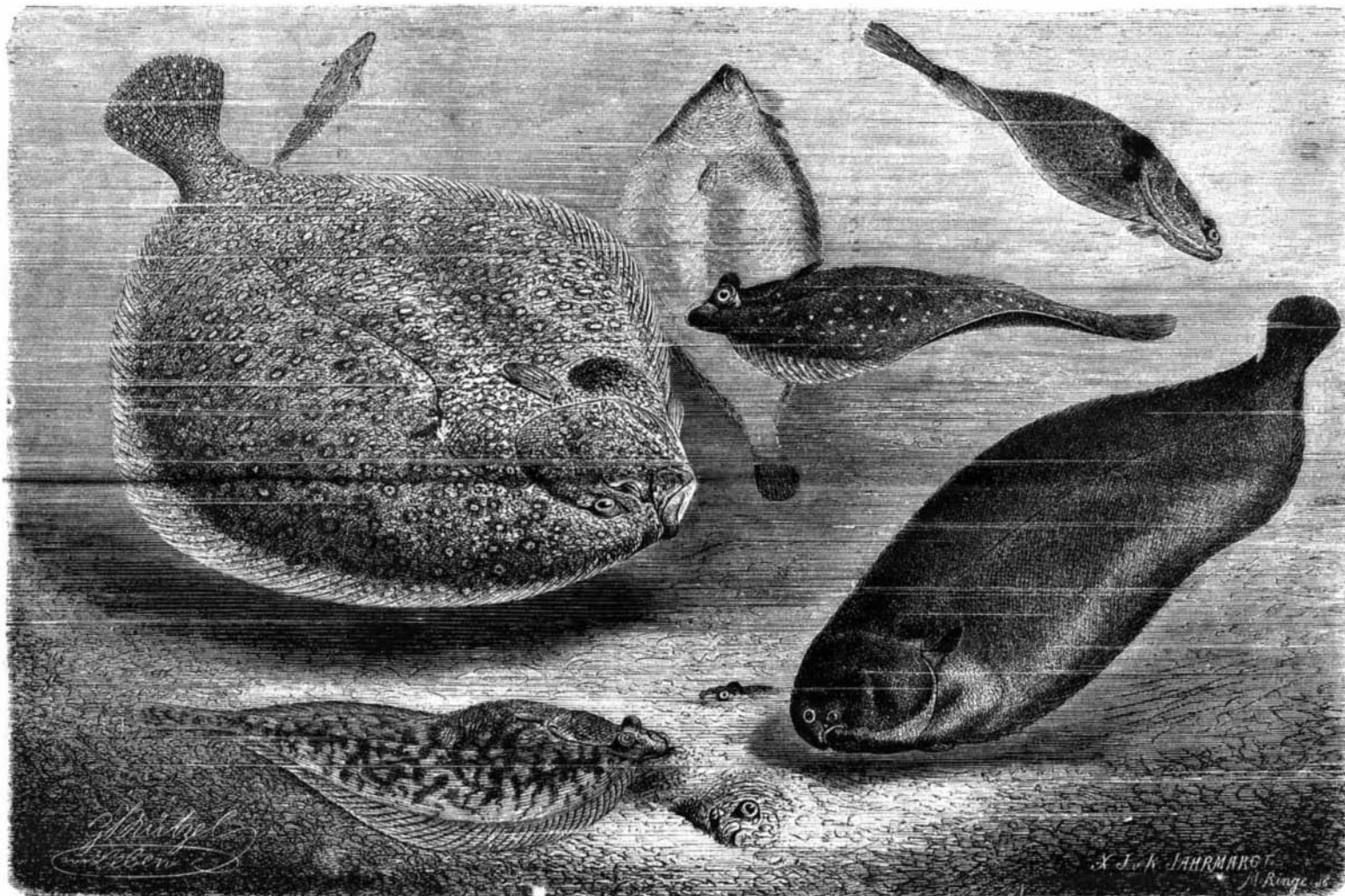
of Southeastern Arizona, is said by Mr. Davenport to be, as a species, "one of the most distinct and satisfactory that has been discovered for a long time, and is wholly unlike any known to our flora or heretofore described."

A Large Shad Tree.—In the same journal G. P. Davis, M.D., mentions the discovery by him, in the town of Glastonbury, Conn., of a shad tree (*Amelanchier canadensis*) which had the size, proportions, and general aspect of an uncommonly fine old sugar maple. Its girth was found to be 8 feet 8 inches at 3 feet 6 inches from the ground, and the spread of its branches to be 48 feet in diameter. The tree was in full bloom on the 19th of May.

The Art which Produces a Cabbage.—At a November meeting of the Philadelphia Academy of Natural Sciences, Mr. Thomas Meehan exhibited a specimen of a cabbage which had, before blossoming, grown to the unusual height of three feet, the spiral coil of the stem, which was to the left, having been thus drawn out without any corresponding increase in the number of leaf scars.

The cabbage, in its natural condition, is an insignificant plant without any such head of leaves as makes it of commercial value when cultivated. The desired effect is produced by sowing the seeds of the wild cabbage at a period of the year so late as not to allow the formation of flowers, in which case the vegetative vigor of the plant is expended in the production of the mass of leaves, which become better developed and denser as the process of cultivation continues.

Sense of Direction in Animals.—The remarkable faculty



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dom exceeds sixty centimeters, its weight only exceptionally seven kilogrammes. It is variously colored, but generally the upper side is brown marbled with gray and marked with round yellow spots. The other side is yellowish-white. It is found almost everywhere in the Atlantic Ocean, the Mediterranean and Baltic Seas, and in great numbers in the German Ocean.

The sole (*Solea vulgaris*) is about sixty centimeters long, and weighs about four kilogrammes. Upon the upper side and upon the pectoral fins it is black, and on the other side brownish. It is found all along the coast of Western Europe, and is also abundant in the German Ocean.

Nearly all of the flat fishes are found in shallow, sandy places near the coast; but they sometimes retire into the deep water. The flesh of all the flat fishes is palatable, and that of many of them is of superior excellence. They form a very important article of food. On most of the sea coast they are only eaten when freshly caught, but in the North they are cut in strips and salted and dried in the air, as the codfish, or smoked. The goldbutt and turbot are specially valued. Great numbers of these fish are sent to the London market by the people of Holland.

The capture of the flat fish is carried on in various ways, according to the locality and their abundance. Sometimes the fishermen at the ebb of the tide wade into the muddy sand, hold the fish down with their feet, and then pick them up. In some places on the coast a great many may be caught in this way, but they are taken chiefly with a drag-net.

Many of the flat fish may be acclimated to live in fresh water. They may be kept in narrow quarters, and soon be-

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5,000; rubiaceæ, with 4,104; graminæ, with 3,200; euphorbiaceæ, with 3,000; labiateæ, with 2,600; and liliaceæ, with 2,100. Then, in point of number of species, come sixteen other orders containing from 1,000 to 1,902. There are ten orders that contain less than five species, and one of these, batideæ, contains but a single genus represented by a single species. It seems that, of the flowering plants of the world, about one out of every ten species known belongs to the order compositæ. To this latter belongs the largest genus, that of *Senecio*, with 900 species.

"Among the curiosities in geographical distribution it is interesting to note the number of genera (about forty) that are common to tropical America and tropical Africa, and are found nowhere else, some of them genera of several species, in which case the bulk of them is confined to America, and only one or two occur in Africa, sometimes as distinct species, sometimes identical with the American species." . . . It seems "probable that the African species of these genera (*Copaifera*, *Drepanocarpus*, *Sparganophorus*, *Telanthera*, *Mohlana*, *Symmeria*, and *Calathea*) have been brought there by the agency of oceanic currents, winds, etc., from the American continent in bygone ages, rather than that the American species should have been derived from the African, as the numbers preponderate on the American side in all cases where the genus contains several species."

A New North American Fern.—Mr. Geo. E. Davenport communicates to the *Bulletin of the Torrey Botanical Club*, for June, a description, accompanied with a plate, of a very beautiful new fern—a species of *Cheilanthes*, which in honor of its discoverer he has named *Ch. pringlei*. This plant, which was detected by Mr. C. G. Pringle on the mountains

which cats, dogs, pigeons, and other animals possess, of returning in a straight line to a point of departure, has awakened much curiosity on the part of naturalists. Some refer it to instinct, some to intelligence similar to that of man, some to an internal mechanism which makes the animals simply automata; but none of these attempted explanations does anything toward solving the mystery. Wallace supposes that when an animal is carried to a great distance in a basket its flight makes it very attentive to the different odors which it encounters upon the way, and that the return of these odors, in inverse order, furnishes the needful guide.

Toussenet supposes that birds recognize the north as the cold quarter, the south as the warm, the east (in France) as the dry, and the west as the moist. Recently, Viguier has published, in the *Revue Philosophique*, an original memoir upon the sense of orientation and its organs, in which he attributes the faculty to a perception of magnetic currents.

Influence of Electricity on Vegetation.—Mr. Macagno (*vide Les Mondes*) has experimented near Palermo upon the influence of atmospheric electricity on the growth of grape vines. Sixteen plants were submitted to the action of an electric current, by means of a copper wire inserted by a platinum point in the extremity of a fruit bearing branch, while another wire connected the branch at its origin with the soil. The experiment lasted from April to September. The wood of the branches which were experimented upon was found to contain less potash and other mineral matters than the rest of the vine, but the leaves had an excess of potash in the form of bitartrate. The grapes collected from the electrized branches furnished more mast, contained more glucose, and were less acid.