

Mr. Johannes A. Osenbrück, of Hemelingen, near Bremen, Germany, has patented a new bearing, which is simple in construction, and which can carry great weights without the friction which acts so destructively upon the bearings in use at present and renders them useless. The bearing is provided with one or more disks for distributing the lubricating material; these disks are below the spindle in case the same is vertical, and are rotated by the spindle by means of intermediate gearing in such a manner that the disks rotate in the same direction as the spindle, but their rapidity decreases in arithmetical progression from the end of the spindle.

One of the principal defects in an ordinary brake is that the shoe is fastened to the clog by bolts or keys that in a short time become loose, thereby causing a disagreeable rattling and increased expense and labor for repair, and the clog, in time, also works loose on the brake bar, because of the shrinking of the latter; and in ordinary brakes the brake guide ordinarily consists of a straight piece of iron fastened to the end of a brake bar itself, and consequently the guide does not always operate effectively. Messrs. Charles F. Wohlforth and Clovis W. Wakefield, of Norwich, Conn., have patented a car brake intended to obviate these difficulties.

THE BERLIN FISHERIES EXHIBITION.

BY FREDERIC A. LUCAS.

The Fisheries Exhibition, which opened at Berlin on the 20th of April, is very wide in its scope, including, besides

a half long, and pointing backwards, so that whatever the animal starts to swallow must go down. The great size of this turtle—it weighs from 300 to 1,500 pounds—would render it a prize indeed were it not that the flesh is poisonous, and causes severe illness to any onerash enough to partake of it. Its home is the tropical Atlantic and the Mediterranean; but it is probably a mere straggler in the latter sea.

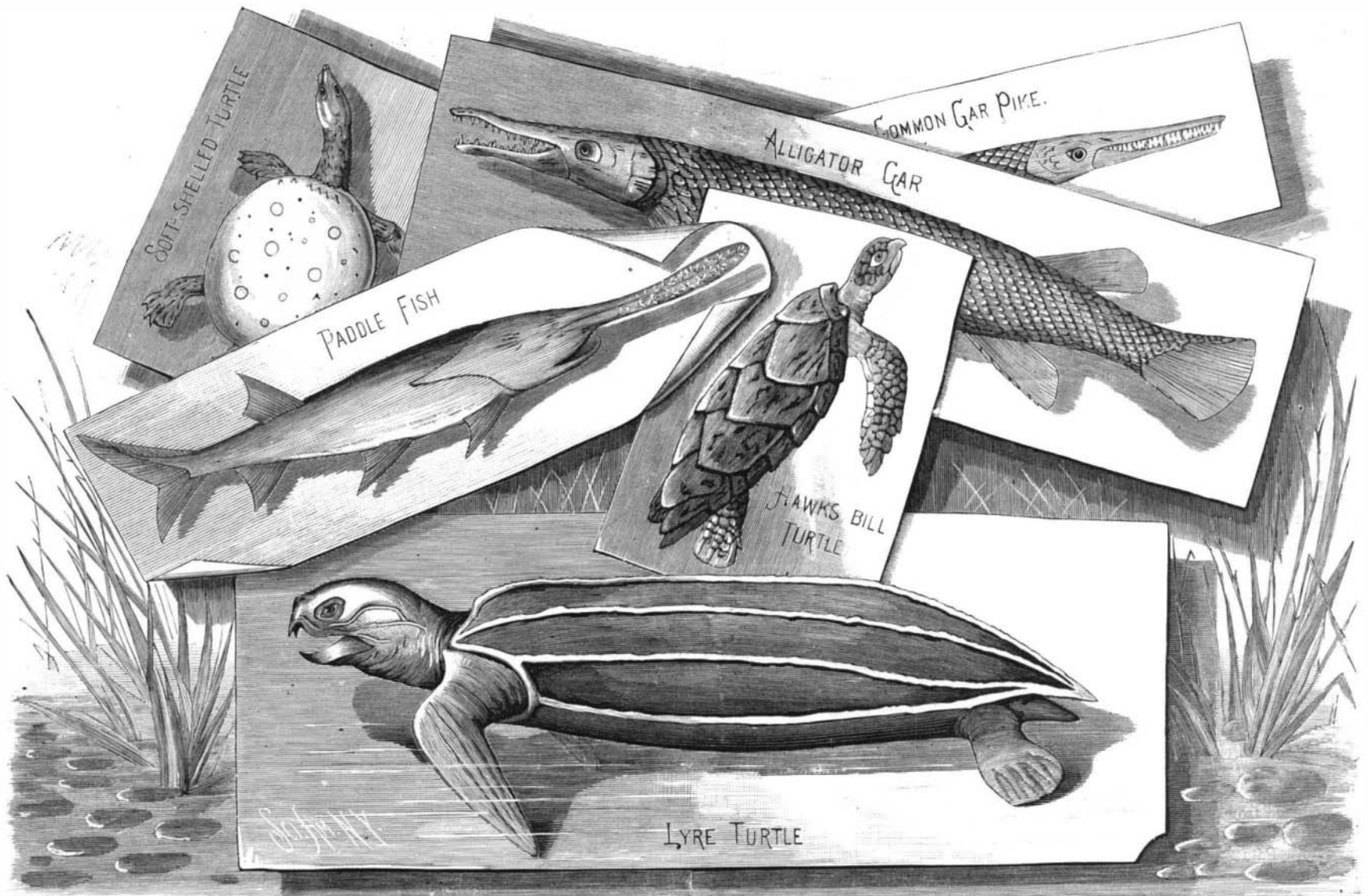
The beautifully mottled plates which cover the back of the hawk's-bill turtle (*Eretmochelys imbricata*) form the well known "tortoise shell" of commerce, and cause it to be much sought after. Thus its very means of protection becomes its greatest source of danger. The plates, when softened by heat, can be united in a homogeneous mass and worked to any required shape. The peculiar color and markings are now so skillfully imitated in horn that it is difficult even for an expert to recognize the difference; but as there will always be plenty of customers who want "the real article," it is not probable that the turtle will be any the less hunted. A great proportion of the sea turtles are captured by spearing them while asleep with a round pointed spear. This is technically called "pegging."

The soft-shelled turtle, of which we have several species, inhabits our Southern and Western streams. The central part of the carapace, or covering of the back, is of bone, but is covered with a smooth skin, and widely bordered by a thick but pliable leathery margin, under which all the extremities can be drawn. These turtles have extremely long necks, are remarkably quick and vigorous in their movements, and exhibit great ferocity when captured. Still

Mississippi. The Rio Grande is perhaps its headquarters, although it would seem on some accounts an ill-chosen habitation. Running up into the warm shallows when the river is high, the rapid fall of the waters entraps numbers of them in small pools. Then begins a veritable struggle for existence; the large fish prey upon the smaller ones, and in their turn fall victims to starvation or are killed by the evaporation of the little pond. This fish attains a length of four or five feet, sometimes six, and very rarely eight feet; but this last is exceptional. The common gar pike (*L. osseus*) is a much smaller and more slender fish, not often exceeding three and a half feet in length, and quite abundant in the great lakes and Western and Southwestern streams.

NATURAL HISTORY NOTES.

Origin of Flowers through Selection by Insects—Dr. Herman Mueller has, not long since, published a work in which he seeks to explain the existing variations in the forms of flowers on the principle of selection. His supposition is that insects of different tastes bred peculiar flowers, just as men breed peculiar races of cattle. Carrion-loving insects bred their kind of flowers, and long-tongued insects the tubular kinds, and many other classes of insects have, each class, bred the flowers they love best. Dr. Mueller has a note in *Nature*, of July 8, in which he points out that *Saxifraga umbrosa* has been adorned with brilliant colors through selection by dipterous insects of the family Syrphidæ. He says: Among diptera the most assiduous visitors of flowers are certain Syrphidæ, which, elegantly colored themselves,



SPECIMENS AT THE BERLIN FISHERIES EXHIBITION.

fishes and the apparatus used in their capture, and examples of the varied articles of food, oil, etc., prepared from them, almost all aquatic animals, such as seals, whales, turtles, and batrachians, down to shell fish and sea urchins. The United States National Museum, in conjunction with the Fish Commission, secured a space of 500 square meters, and sent a large and interesting collection, which was arranged under the supervision of Mr. G. Brown Goode. Among private individuals, Prof. H. A. Ward, of Rochester, sent a very creditable series of specimens, a few of which are shown on this page. Noteworthy among these is the lyre turtle (*Sphargis coriacea*), the largest of existing species, and par excellence a sea turtle. Until quite recently specimens of this were extremely rare; but during the past few years at least six have been taken between Newport and Cape Cod, having followed northward the warm waters of the Gulf Stream. Instead of the usual bony shield, this turtle is covered with small plates about the size of a ten cent piece, embedded in a thick leathery skin, from whence comes its popular appellation of leather turtle. The name of lyre turtle was bestowed upon it from its fancied resemblance to that musical instrument, the five dorsal ridges representing the strings. The paddles are nailless and covered with black skin a little suggestive of India-rubber. The animal figured was about seven feet long, and as much in width from tip to tip of the front flippers. The throat is lined with sharply-tipped spines, about an inch and

their food seems to consist chiefly of insects and small shells.

The paddle-fish (*Polyodon folium*) is a curious resident of the Ohio and its tributaries. It is said, and the statement seems plausible, to stir up the bottom for insects and crayfish, and pick them up in its capacious mouth. As it is also accused of a predilection for offal it is not used as food, although the flesh looks firm and palatable. Still its personal appearance is somewhat against it, for many people have strong prejudices against anything that seems at all uncanny. Some refuse to eat eels because "they look just like snakes," and the skate is held in abhorrence simply because it isn't a pretty fish.

The gars, one might almost say, are living fossils, for they are among the few existing representatives of the hosts of mail-clad fishes that swam the Devonian and Oolitic seas and carried terror and destruction among their weaker brethren. Compactly built, clad in silvery armor, and equipped with a goodly supply of wicked-looking teeth, they are true fresh water tyrants. Numbers of them are taken in seines, to the disgust of fishermen whose nets are torn by their teeth. The common gar is found west of the Hudson, and ranges from the great lakes to Florida and in the Mississippi and its tributaries. The alligator gar (*Lepisosteus platystomus*), so called from his short, broad muzzle, is a more Southern fish, and dwells from Florida to Texas, running some distance up the

are fond of splendid flower colors, and, before eating pollen or sucking nectar, like to stop awhile, hovering free in the air, in front of their favorites, apparently fascinated, or at least delighted, by the brilliancy of their colors. Thus, I have repeatedly observed *Syrphus balteatus* hovering before the flowers of *Verbascum nigrum*, and often before *Melanostoma mellina*; *Ascia podagrica* before *Veronica chamaedrys*; in the Alps, the lank *Sphegina clunipes* before *Saxifraga rotundifolia*; and, in my garden, *Ascia podagrica* before *Saxifraga umbrosa*. Of *Verbascum nigrum*, the main fertilizers are humble bees, diptera co operating only in a subordinate degree; in the case of the three other species, on the contrary, the above named Syrphidæ are such frequent visitors and cross-fertilizers that we may safely conclude that it is by their selection of elegantly colored varieties that these flowers have acquired their beautiful peculiarity. Hence, in order to estimate the color sense of these Syrphidæ, it is worth while to consider what color combinations they have been able to produce by their selection. *Saxifraga umbrosa* being, as far as hitherto known, their finest masterpiece, we may, in the first place, look at the variegated decoration of this species. Its snow-white petals are adorned with colored spots, which, in size and intensity of light, gradually decrease from the base of the petals toward their extremity. Indeed, nearest to their base, within the first third of their length, there is a large irregular spot of an intense yellow;