A SUCKING FISH.

A remora or sucking fish, probably *Remora acobœa*, was not very long since taken from the body of a shark to which it had attached itself, and which had wandered into our bay. The Echineidæ or remoras are a very curious tribe of fishes. It is by no means easy to say what is the true habitat of any of the species, for they fasten themselves by their sucker to any large swimming or floating object, such as a shark or a ship, for the remora isn't particular in its choice, and allow themselves to be carried wherever that object goes, so that the same species may be taken in localities thousands of miles apart.

But the remora is not a fixture like a barnacle; it can loose its hold at pleasure, and its object in attaching itself to a large carnivorous fish or to a ship, is the same as that which attaches a certain class of human beings to their richer or their more energetic neighbors. It is there for what it can get—for the crumbs and morsels of loaves and fishes which it has not the ability to catch entire or alive.

The sucker is not upon the under side like that of the family of fishes known as *cyclopteridæ*, of which we have two species in this bay, but is upon the back of the head, and consists of a series of parallel transverse horizontal bars within a border or frame, and resembling nothing so much as a section of a window blind. The action of these laminæ, the upper edge of which can be raised or lowered so as to change the angle, creates the vacuum which enables the creature to adhere. Precisely the same arrangement of transverse parallel laminæ occurs upon the feet of a large tribe of small lizards known as Geckoes, abundant in tropical regions. By them the Geckoes can walk along walls and on ceilings with the greatest assurance.

If now we look more closely at the remora, we shall find that in its general characteristics it resembles that large class of fishes which have the anterior part of their dorsal fin composed of spinous rays, and the posterior part of soft and jointed rays; yet, curiously enough, it has no spines upon its back, but a soft-rayed fin only. What has become of the first or spinous dorsal? The answer will be given by the sucker, which is simply a modified first dorsal, every bar or lamina representing a ray.

The sucker is in fact a beautiful example of that adaptation of existing parts to new uses which abound in organic life, and which are so many proofs of the evolutional unity of living beings.

When, in a given tribe of creatures having a certain definite structure, the habits and environment of an animal necessitate a change in that structure, nature does not create a new organ, but alters an old one. The remora, unable to compete with the swifter denizens of the sea, gradually became more and more of a commensal or hanger-on, and gradually became more adapted for such a life by the peculiar development of its first dorsal fin. In the cyclopterids or lump-suckers the same end is attained by the union of the ventrals into a circular sucking disk.

To give an example among mammals, the higher monkeys are specialized for climbing by the power of grasping possessed by all four of their extremities, which thus become hands. In many of the lower, which have the thumb so aborted that the other fingers can only take a hook-like grasp, the tail comes into use as a fifth hand. The arboreal sloths, whose clumsy paws are quite a contrast to the hands of the monkeys, hold to the branches by their long reversed curved claws, which form a powerful hook, and most other climbing mammals ascend by the hold obtained upon the inequalities of the surface by the sharp claws of all four of their feet.—*W. N. Lockington, in S. F. Science Record.*

ANOTHER TUNNEL PROJECT.

As a rival project to the Simplon tunnel, the tunneling of Mont Blanc is proposed as an alternative which possesses several decided advantages over the Simplon route, which was thought to furnish the best practical route from Paris to Brindisi, by way of Pontaclier and Lausanne. The new project is pronounced to be entirely feasible by French engineers who have proposed it, and is said to be receiving favorable consideration. Contrary to general opinion on the subject, the tunneling of Mont Blanc is declared to be an easier undertaking than that of the Simplon; the estimates of cost for executing the work being, in the case of the Simplon, 136,000,000 francs, and in the case of Mont Blanc only 75,000,000. Furthermore, it is claimed that the Mont Blanc tunnel will make the journey from Paris to Genoa 97 kilometers shorter, and from Paris to Milan, 44 kilometers shorter than by the proposed Simplon route. The location of the tunnel, which meets with favor from its advocates, is said to be from Chamounix to Courmayeur. Our authority does not go into further details; but the project has met with some remonstrance on sentimental grounds. We reproduce the following affecting lines, which vividly recall the picture of Mark Twain weeping over the grave of Adam: "The audacity of modern engineering has culminated in a projected attempt on Mont Blanc. It is bad enough that the once virgin summit should be annually defiled by cockney feet; but that the awful mysteries of its rocky foundation should be invaded by swarms of rude 'navvies' is past belief, yet it is seriously contemplated."

THE THERMOPILE.—Among the recent inventions by Mr. Edison, who, it seems, is not altogether absorbed in his electric light experiments, is that of what he calls the thermopile, designed for the measurement of infinitesimal degrees of heat. He describes the instrument in the following words: "It consists of a carbon button placed between two metallic plates. A current of electricity is passed through one plate, then through the carbon and through the other plate. A piece of hard rubber or of gelatine is so supported as to press against these plates. The whole is then placed in connection with a galvanometer and an electric battery. Heat causes the strip of hard rubber to expand and press the plates closer together on the carbon, allows more current to pass through and deflects the needle of the galvanometer. Cold decreases the pressure. Moisture near the strip of gelatine can be measured in the same way by increasing or decreasing the pressure, and accordingly deflecting the needle. By means of this apparatus, or one combined with sensitive electrical galvanometers, it is possible to measure the millionth part of a degree Fahrenheit. Infinitesimal changes in the moisture of the atmosphere can be indicated in the same way—changes which are a hundred thousand times less in quantity than those that can be indicated by the present barometer. It will thus foretell a storm much more readily. The carbon button I have in this instrument is of lampblack burned from rigolene."

AMONG its many objects of historical interest, the Paris Astronomical Museum contains a pair of Mercator's globes, dating from the middle of the sixteenth century. That figuring the earth is the first on which meridians of longitude and latitude were laid down. It is reported that the great equatorial lakes of Africa are all to be found on it.

THE *Japan Herald* reports that the coinage of silver at the mint at Osaka is going on, such is the demand, at the daily rate of 30,000 pieces, and 1,000,000 monthly, with a demand greater than the mint with its present capacity can supply.

DOMESTIC RECIPES.

VIENNA YEAST.—Vienna bread and Vienna beer are said to be the best in the world. Both owe their superiority to the yeast used, which is prepared in the following manner: Indian corn, barley and rye (all sprouting) are powdered and mixed, and then macerated in water at a temperature of from 149° to 167° Fahr. Saccharification takes place in a few hours, when the liquor is racked off and allowed to clear, and fermentation is set up by the help of a minute quantity of any ordinary yeast. Carbonic acid is disengaged during the process with so much rapidity that the globules of yeast are thrown up by the gas, and remain floating on the surface, where they form a thick scum. The latter is carefully removed, and constitutes the best and purest yeast, which, when drained and compressed in a hydraulic press, can be kept from 8 to 15 days, according to the season.

OATMEAL PUDDING.—The following is a new method of preparing oatmeal pudding, and differs somewhat from that in general use. Take one pound best oatmeal, one quart new milk, warmed. Stir the oatmeal into the milk, and let it stand over night. Then butter a basin, put in the oatmeal and milk, stir in a spoonful of baking powder, and afterwards tie over the basin a well-floured cloth and boil for two hours. If eaten as pudding proper, serve it up with custard sauce, currant jelly or treacle. If it is to be eaten in place of meat—for good meat it is—use tomato sauce. With a sufficiency of tomato sauce it will make a nice meal for three or four adults and several children, and gives a most wholesome and nutritious dish at a very small cost. A very good variety is made by using half oatmeal and half wheatmeal.—*Germantown Telegraph.*

ORANGE TARTS.—Take six or seven fine, large oranges, roll them under your hand on a table to increase the juice, and then squeeze them through a strainer over half a pound or more of crushed sugar. Mix the orange juice and the sugar thoroughly together. Break twelve eggs into a large, shallow pan, and beat them till thick and smooth; then stir in, gradually, the orange juice and sugar. Line some patty pans with good puff paste, having first buttered them inside; then fill with the orange mixture and set them immediately into a brick oven. Bake the tarts a light brown, and when done set them to cool. When quite cold, take them out of the patty pans, put them on a large dish, and grate sugar over their tops. All tarts are best the day they are baked; but they should not be sent to the table warm.

TAPIOCA.—Tapioca is a nutritious and easily digested article of diet, and it with rice are both especially adapted to accompany the fruit diet for prospective mothers. My favorite way of cooking tapioca is to soak a teacupful over night or several hours in a quart of water; then add a pint of rich milk, a little salt, and cook by putting it in a tin pail with a tight cover, and setting the pail in boiling water; let it boil an hour; sometimes I add raisins. Serve either hot or cold, with cream and sugar or fruit. A nice dish for breakfast or lunch may be made of stale bread, in the following manner: Make a thin batter of one egg, one-half cup of milk, a little salt and flour. Dip the slices of bread in this, and fry a nice brown. Serve hot, with butter and sugar or syrup.

TO MAKE GALL SOAP.—Gall soap, excellent for washing silks and ribbons, may be made by heating one pound of cocoanut oil to 60° Fahr., into which one-half a pound of caustic soda is gradually stirred. To this, one-half a pound of Venice turpentine, previously warmed in another vessel, is added. The kettle is allowed to stand for four hours, subject to a gentle heat, after which the fire is increased until the contents are perfectly clear. One pound of ox gall, followed by two pounds of castile soap, is then mixed in, and the whole allowed to cool, when it may be cut into cakes.