

M. LEVERRIER has been elected President of the Association Scientifique de France for the fifteenth time. The society spent about £1200 in scientific experiments last year.

FATHER SECCHI has invented a new electric seismograph with moving smoked paper, which indicates the direction, number, intensity, duration of the shocks, and many other details of great value in connection with seismography.

LARGE FEES FOR LAWYERS.—The St. Louis *Globe* says: "In the Dance will case there are said to be 30 lawyers, and \$450,000 to fight over. This is only \$15,000 to each lawyer. The Bar Association should protest."

HUMBOLDT observed that in tropical regions the approach of rain is often announced by the twinkling of stars near the zenith. M. Montigny observed the intensity of the twinkling for 300 evenings, and found that it increased if a storm or a barometric depression was approaching. When rain foreboded the glimmer is especially strong.

EXPERIMENTS have recently been successfully made in Italy on a method of burning petroleum under steam boilers, which consists simply in pouring the oil over a thin layer of asbestos. The petroleum burns with intense heat, while the asbestos, being incumcombustible, is not affected, but serves as a means of retaining the oil and acting as a large wick. In the experiments, sheets of paper placed beneath the furnace were not injured, despite the fierce heat from the oil above.

THE ironclad frigate *Alexandra* has a steel wire hawser in lieu of a hemp hawser; it is 150 fathoms long and weighs $1\frac{1}{2}$ tons, and occupies, when coiled, a space 4 ft. 6 in. by 4 ft. 6 in. A hemp hawser of the same strength would have to be 19 in., and of double the weight of the steel, and would occupy six times the space.

TURKEY is reported to have received from the Rhode Island manufactory within the last two years, 300,000, breech-loading rifles of a similar pattern to the Martini-Henry. The Turkish Government is stated to expect 200,000 more, together with an immense quantity of cartridges. Russia has also received a large supply of improved arms from the United States.

THE Grand Trunk Railway Directorate, of Canada, proposes to introduce steel cars in which to carry grain. They are to be shorter than the present cars and as much stronger as steel is than wood, which will permit of the grain being loaded higher than at present. The new cars are to weigh six tons instead of ten tons as now, and carry eighteen tons instead of ten. Cars of the new model are being experimented with.

FLOATING GARDENS.—In the beautiful valley of Cashmere, among the Himalayan mountains, lies a lovely lake called Dal. Floating about on its surface, sometimes carried by the winds from one side of the lake to the other, are numerous small islands, on which grow the fairest cucumbers and the most luscious melons known. The way in which these floating gardens are made is very curious. All about the main shores of the lake grow quantities of reeds, sedges and water-lilies. When these grow closely together people cut them from the roots which hold them near the shore. The leaves are then spread over the stems, making a kind of trestlework to support the soil with which it is next to be covered. After this has been done, the seeds are planted, and the floating garden is left to care for itself until the fruits are ready for picking.—*Mines, Metals and Arts*, v, 400.

A FRENCH INDUSTRY.—A peculiar industry has recently come to grief in Paris. An establishment was organized for the purpose of breeding maggots. The means by which the "god-kissing carrion" was encouraged in the process were very simple. Over the soil there were spread large quantities of stale fish, dead lobsters, odorous poultry, and other refuse of the markets, as much as half a ton of large fish being taken on the premises in a single day. This stuff was soon attacked by the maggots, which in turn were carefully picked out and packed in casks of galvanized iron, and finally were sold for fish bait and chicken feed. The remaining refuse was converted into manure. It may well be supposed that the neighbors objected to the smells from the establishment. Moreover, the production of maggots was not confined to the premises; the flies roamed round and deposited the larvæ upon any exposed food in the vicinity. There was a little doubt as to whether the flies came within the scope of the sanitary laws, but at last the authorities ordered and the police stopped the manufacture.

NATURAL HISTORY.

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THE CUTTLE-FISH

which we give to a canary bird, is often thought by children to be some kind of a dried fish. In the stories it is called Cuttle-fish bone, but it is not properly a bone, but it is really the shell of the cuttle-fish, and when I tell you that the cuttle-fish is not a fish, you will begin to think that the names are very much mixed. The cuttle-fish is closely related to the animals usually called "shell-fish," such as clams, oysters, mussels, and the like; indeed it belongs to a division of these, which have long feeders, or bodies that help them to move about, arranged on their head, hence the class of animals is called *cephalopods*—a rather big word for youngsters—but when you know that it is from the Greek words for *head* and *foot*, and that it describes the peculiar form of these animals, it will perhaps not seem too big a word. These naturalists call the cuttle-fish *Sepia*, and there are thirty or more different kinds found in the sea, in all parts of the world; the portrait of the cuttle-fish here shown will give you a better idea of how they look than a long description. You see that it has a bag-like body, with a sort of wing on each side; the round place near the top is the mouth, and around this are 10 arms or feet, of which two are much longer than the rest, and all have little suckers upon them, which allow the animal to hold very fast to anything it catches, or to a rock if it wishes. The cuttle-fish has a shell to strengthen its soft body, but strange enough, carries it inside; and this shell is what is known as cuttle-fish bone. It is very light indeed, and if you examine it carefully you will see that it is made up of the most delicate little plates of bony matter. The cuttle-fishes walk along on the bottom by their many feet or feelers, and when they swim they go backwards. Their swimming is done in a very droll manner; they take water into their bodies, and send it out in a stream with great force, and thus push themselves, hind foremost, through the water. Another strange thing about them is, that they always carry a bag of ink with them, and when chased by a large fish, they throw out some of this inky matter, and so cloud the water that their enemy can not see them. This coloring matter, dried and made into cakes, is called *sepia*, and is used in making water-color drawings; it has a fine, rich, brown tint. The cuttle-fish bone of the shops is mostly picked up on the shores of the Mediterranean sea, where it washes ashore from the animals which die, or which are killed by their enemies. The cuttle-bone is put into bird-cages, because the birds like to rub their bills against some such substance, and being, like other shells, mostly composed of lime, it furnishes them with this, which, like all other birds, they need to form the shells to their eggs. The powdered bone is sometimes used for tooth-powder, and it has been used to polish metals. The bone at the right hand of the engraving is about half the usual size; but there is a cuttle-fish in the China seas that has a bone a foot and a half long.—*American Agriculturist*.

PENWIPERS.—Very pretty penwipers can be made in the shape of butterflies with scraps of silk and satin. Eight pieces of card should be cut into the semblance of wings. These should be covered with silk or satin, firmly sewn over, and then the covered pieces put together and sewn. These four wings must be attached to a piece of black cloth, twisted up to form the body, with a sealing-wax head, and a horsehair put through, touched with a dot of sealing-wax at each end. The butterfly's upper wings should be different to the under ones, and should be raised up a little. The under ones are most effective in plain colours, particularly yellow, and the two upper ones of brocades or fancy silk. The butterfly, when finished, should be sewn on to a cloth circular penwiper. Pretty pincushions may also be made in this way, with the pins put into the edge of the wings. Another easy way of making a penwiper is to cut out a circular piece of red or black cloth about ten inches in diameter, and make a ring of small circles, previously cut out in different coloured cloth. There should be eighteen small circles, and each one should half cover the preceding one, and be notched out round the edge. Any tiny scraps will do, and the effect is excessively bright and pretty. The circles should be about the size of a two-shilling piece, and one should be in the centre, with a smaller one partially covering it, and a small button in the centre as a finish. A tuft of small feathers arranged in a rosette, and gummed with very strong gum on to red or black cloth, looks very well, and is easy to make. Any feathers can be used, and soft white duck ones look well.