

MISCELLANEA.

NEW FISH.—An ichthyological discovery of the utmost importance has lately been communicated by Prof. W. Peters to the Royal Academy of Science of Berlin. This is a second genus and species of the wonderful order of *Leptocardii*, or brainless fishes, the so-called invertebrated vertebrates. This order, which some naturalists rank as one of the primary divisions of vertebrata, has hitherto been known to be represented by the single genus *Amphioxus*, which comprehends the various supposed species of lancelets. The new animal is closely related to the *Amphioxus*, but wants both caudal and anal fins, and has, instead, a high dorsal fin. The *Epigomethys cultellus*, as the creature is called, was dredged in eight fathoms, near Peale island, Moreton bay, Australia.

INSECT NERVES.—The nervous system of the *Hymenoptera* (bees, wasps, ants, sawflies, etc.,) has been studied by E. Brandt. He describes certain pedunculate bodies whose development, as originally discovered by Dujardin, corresponds with the degree of development of the instincts and intelligence in the different species. Brandt's researches now enable him to prove that this is the case also for the different sexes of the same species. Thus in the worker of the honey bee they are of immense size, while they are slightly developed in the queen and in the males.

WEIGHT OF AN ATOM.—On the absolute weight of atoms, a lecture experiment by J. Annaheim, is as follows:—Dilute solutions of fuchsine were examined, and it was found that 0.00000002 gram. of the substance can be detected by the naked eye. If we assume that in a drop of the solution there is one molecule of fuchsine, and at least this amount must be present, the weight of an atom of hydrogen would be 0.00000000059 gram. A similar experiment with cyanine gave similar results.

CEMENT FOR JOINING AMBER.—A solution of hard copal in pure ether, of the consistency of castor oil, is suggested by Ph. Rust for cementing amber. The carefully-cleaned surfaces of fracture, coated with the solution, should be pressed together, and retained in contact by means of a string wound around the object, or in some other suitable way. The operation should be performed as rapidly as possible, since the evaporation of the ether impairs the adhesiveness of the cement; so that all arrangements for compressing the object should be made before laying on the cement. A few days are required for the complete hardening of it. In repairing tubes, as for pipes, any of the solution happening to pass into the interior should be carefully removed at once with a slender feather.

It is said that in Tasmania there is an insectivorous plant which eclipses anything of the kind known in this country. The plant grows in the crevices of rocky ground, is about 6in. in height, with a single vertical stem from which project one or two dozen small foot-stalks, carrying small discs about 3in. in circumference, fringed with tentacles. A sticky substance exudes from the ends of the tentacles and filaments, which effectually retain a fly and at once convey it to the centre of the flower, which closes tightly over it, and, according to the report, the fly is "digested."

A COMPANY has been formed to raise the "Vanguard," and in the event of success they are to pay the Government about £30,000, as the latter will probably decline to exercise their option of purchase, for though a fine vessel she is of an obsolete type. An improved diving dress, capable of withstanding a pressure of 130ft. of water, has been devised, and the company confidently predict the success of their operations.

A BULL butted a train off the track of the Richmond and Danville railroad, last Monday, near a bridge. The engine, tender and six cars went through the bridge and the engineer was killed. Shortly after, the locomotive boiler exploded, and the bridge and cars caught fire. The bridge was 600 feet and was totally consumed.

THE mid-day meal should be light or delayed till the work is done. Intense brain work cannot go on at the same time the stomach is strongly taxed in digesting food.

COMPOSITION FOR MIRRORS.—The glass is first covered with a deposit of silver, platinum, antimony, or other metal, and then coated with gum varnish; on this the following composition is poured: 3oz. cyanide of potassium; one quart water, nitrate of mercury—to saturation; and sufficient acetic acid to give an acid reaction; and the whole diluted with five quarts of water. After the lapse of half an hour the mercury has penetrated to the surface of the glass, and by forming an amalgam with the metal, gives a beautiful white lustre.—*Ber. d. D. Chem. Gessellsch.*, per *D. A. Poly. Ztg.*, v, 146.

DOMESTIC RECEIPTS.

MECHANICAL POWER OF WATER.—Water is a purifier, a cleanser, a dissolver and a mechanical power, and will run along down an incline the solid ingredients of town sewage, with road detritus—such as grit and silt—the moving power of water being in proportion to the volume, the vertical depth and the gradient down which the flow is directed. Flushing by volume and head, artificially formed, will remove detritus from sewers of low gradients, where accumulation may have taken place. A velocity in the sewage of two feet six inches per second will remove any solids likely to be passed into drains and sewers.

WORTH KNOWING.—We are assured that one pound of green copperas, dissolved in one quart of water and poured down a water-closet, will effectually concentrate and destroy the foulest smells. On board ships and steamboats, about hotels and other public places, there is nothing so nice to purify the air. Simple green copperas, dissolved in anything under the bed, will render a hospital, or other place for the sick, free from unpleasant smells. In fish-markets, slaughter houses, sinks and wherever there are offensive gases, dissolve copperas and sprinkle it about, and in a few days the smell will pass away. If a cat, rat or mouse dies about the house and sends forth an offensive gas, place some dissolved copperas in an open vessel near the place where the nuisance is, and it will purify the atmosphere.

POISONS.—For any poison, the most speedy, certain and most frequently efficacious remedy in the world, if immediately taken, is a heaping teaspoonful of ground mustard, stirred rapidly in a glass of cold water, and drank down at a draft, causing instantaneous vomiting. As soon as the vomiting ceases, swallow two tablespoonfuls or more of sweet-oil, or any other mild oil. If no ground mustard is at hand, drink a teacupful or more of sweet-oil or any other pure-mild oil, melted hog's lard, melted butter, train oil, cod-liver oil, any of which protect the coats of the stomach from the disorganizing effects of the poison; and, to a certain extent, by filling up the pores of the stomach (the mouths of the absorbents) prevent the poison being taken up in the circulation of the blood. Persons bitten by rattlesnakes have drunk oil freely and recovered. These are things to be done while a physician is being sent for.

COFFEE AS AN INVIGORATOR.—A correspondent of the London *Lancet*, who owns a water-power mill, says: I am frequently compelled, at this season of the year, to have men working in water even in frosty weather. I find the following allowance gives great satisfaction to the men, and we never have a case of cold or injury to the men in any way: Kettle of coffee, made with half sweet milk, half water, three or four eggs, whipped, poured into it when off the boil; hot toasted bread with plenty of butter of finest quality. Serve up this every two and a half hours. The expense is much less than the usual allowance of whiskey, and the men work far better, and if care is taken to have the coffee, milk (cream is still better), bread and butter, and especially the butter, of the very finest quality, the men are delighted with it. I am persuaded it would be worth while to try this allowance instead of grog. Giving extra grog gives the men a notion that it is good for them, and perpetuates the belief in stimulants among workmen.

BEAUTY LIKE SUMMER FRUIT.—Beauty is as summer fruits, which are easy to corrupt, and cannot last; and, for the most part, it makes a dissolute youth, and an age a little out of countenance; but yet, certainly, again, if it light well, it maketh virtues shine, and vices blush.—*Lord Bacon*.

RIGHTEOUS VENGEANCE.—Some one having urged Tasso to avenge himself upon a man who had done him many injuries, he said, "I wish to take from him neither his property nor his life nor his honor, but only his ill-will towards me."

ANTISEPTIC PROPERTIES OF BI-CHROMATE OF POTASSA.—M. Langeroy finds that by simply submerging vegetable and animal products in a solution of 1-1000 parts bi-chromate of potassa in water, they are effectually preserved. If the meat be kept in the bath for several months it assumes a gutta-percha like appearance, is so hard that medals can be struck therefrom.—*La Nature*, v, 142.

A NEW GALVANIC ELEMENT.—Dr. Robert Newmann has constructed a new galvanic element whose electrodes are respectively of zinc and gilded lead. The liquid employed is not mentioned by the *Journal Télégraphique*. According to the opinion of the constructor, the electromotive force of this element is twenty-five per cent. greater than that of Bunsen. The latter, according to Waltenhofen, equals 1.67 Daniel.—*D. A. Poly. Ztg.*, v, 142.