

THE DUCK-BILLED PLATYPUS.

The *ornithorhynchus* or platypus is a singular animal, which seems to form a connecting link between the animals and birds, and in some respects having affinities even with reptiles. It is from 18 to 22 inches long, and has a stubby tail 5 inches long. The color is brown above and whitish below. The jaws are inclosed in a horny sheath, very sensitive, like the bill of a duck, and have two horny teeth on each side; the snout is flat and broad, the lower jaw shorter and narrower, the eyes small and brilliant; ears not apparent externally, with an aperture that can be opened or shut at will; and the fur is soft and thick, like that of the otter. The legs are short, and the feet five toed, and webbed. It secretes milk for the nourishment of its young, which are born blind and naked. It burrows in the banks of streams, where it passes the day in sleep, rolled up like a ball, coming out at dusk and during the night in search of food. It is an excellent swimmer and diver, and in feeds upon worms, insects, and small aquatic animals, in the manner of a duck. It walks very well, and climbs trees with facility. It can remain under water for eight minutes at a time; it is cleanly in habit, and fond of warmth and dryness. The young die very soon in confinement.



THE DUCK-BILLED PLATYPUS.

THE COLOR AND FRAGRANCE OF FLOWERS.

Prof. Vogel discourses pleasantly on "The Color and Fragrance of Flowers" in the *International Review* wherein he says: "The chemical transformations in the bodies of living plants, by which the most manifold and brilliant colors are produced, are almost entirely unknown to us. We see a flower pass through the entire scale of red, from the softest pink to the darkest purple-brown; but can give no explanation whatever of the mysterious process. We know, for instance, that the light of the sun greatly influences the color of living plants, and experience has taught us that in most cases its total exclusion is equivalent to the absence of every color; in other words, that it produces white leaves and blossoms. However, this rule is by no means without exception, as many roots, the roots of *Alcanna*, for instance, although buried in the soil, and completely secluded from the rays of the sun, possess a strong and vivid color. We can explain neither the rule nor the exception; on the contrary, we know that, as far as lifeless matter is concerned, mineral or vegetable colors are weakened, and gradually destroyed, rather than enhanced, by the action of the light. Our ignorance in this respect restricts our influence upon the coloration of flowers and blossoms to a very modest and merely empirical one. A mere chance has led to the discovery that the infusion of sulphates of iron into the soil darkens the hue of certain plants which contain a considerable quantity of tannin; and gardeners have profited by this discovery for the culture of the *Horthensia* (*Hydrangea*). But these examples are rare; and as yet we must renounce all claim to the control and influence of the natural course of things in this field. We may be able to change the color of a plant or flower by transferring it into another soil; but we are never sure of the result, and cannot give any scientific explanation of it.

"The fragrance of a flower is likewise produced by chemical action which hitherto has escaped our closest investigations; we see the result; we see that a flower, like the bee which transforms pollen into honey and wax, fabricates volatile oils out of air, water, and light; but the chemical process itself is a complete mystery to us. We only know that the slowness or rapidity of the evaporation of these oils is the cause of the stronger or weaker odor of the flower. The mode of their formation is a good example of the unlimited variability and manifold variety of vegetation's chemical powers. Many plants do not limit themselves to the formation of a certain volatile oil in their blossoms or flowers, but produce at the same time various kinds of oils in their different parts. The orange tree, for instance, produces volatile oils in the leaves, flowers, and the rind of its fruit. A close investigation convinces us that these differ, not only in their smell and taste, but also in their weight, density, and other physical and chemical quantities; that, in short, they are different and independent substances which cannot be mistaken for each other. The same plant must therefore possess three different organisms, by which it generates three entirely different substances out of the same ingredients. What chemical laboratory, be it ever so well furnished and skilfully managed, can boast of results in any respect so wonderful?"

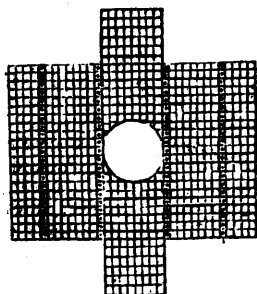


Fig. 2.—WIRE FOR SCREEN.

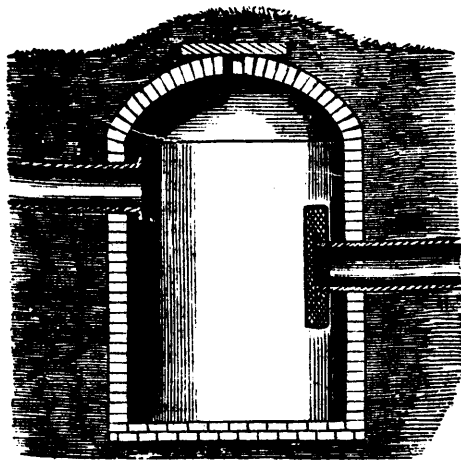


Fig. 1.—CESSPOOL WITH SCREEN.

DRAIN FROM A CESS-POOL.—(SEE PAGE 31.)