live in the water. These extremities are plunged into the uterine sinuses, from which they are separated by a membrane of great delicacy. The pores of this tunic are large enough to permit the plasma, but not the globules of the blood of the mother, to pass into the placental vessels.

To verify these views, he made the following experiment: after the birth of a child at the Hotel-Dieu, he tied and cut the cord, and then separated a piece of it, first ligating it at each end. The umbilical arteries presented a deep blue color, the vein a lilac tint. Two punctures were made at the extremities of this loop, one into an artery the other the vein; the two jets were received on a white surface; that from the artery, was of the color of the blood of a vein of an adult; that from the vein was sensibly redder, its colour was intermediate to that of arterial and venous adult blood, but approaching venous. The blood by contact with the air became redder. A drop of warm blood from the vein was quickly spread on a warm glass, and, under the microscope, was in every way similar to the blood of an adult. After the separation of the placenta, the umbilical vein presented a lilac reddish tint, while the arteries were much darker, approaching blue.

All subsequent experiments have verified these observations. He concludes from these facts, that the blood of the umbilical vein is more oxygenated than that of the arteries; and that the placenta is an organ for the formation of the blood.

Again, the fœtal bile is the same as the adult, though a little more liquid. Hence, the liver acts the same in the fœtus as the adult. It has for its purpose the decarbonizing of the blood, and giving the child a quantity of that superoxygenated product, glucose. Thus the liver becomes indirectly an organ of sanguification, though it does not play the part of lungs or gills during intra-uterine life.

Hence, we may conclude the placenta to be a sort of pediculated gill, an organ of absorption, nutrition, and respiration.—(*Gazette Hebdom.*, February 1, 1861.)

MATERIA MEDICA.

ACONITIA AND ITS SUBSTITUTES.

BY WILLIAM PROCTOR, JUNR.

The high price and variable quality of aconitia has rendered its use as a medicinal agent so expensive and uncertain, that many physicians never employ it, depending upon the stronger tinctures of the root, in cases requiring the external use of the aconite. In the manufacture of organic chemical products, very much is added to their cost by the complications and loss rendered necessary or unavoidable in their purification from colouring matter, or strongly adherent resinous or other inert substances in minute quantity, which, whilst their presence impairs the market value of the chemicals, often do not greatly reduce their medicinal power. In asking the attention of pharmaceutists to the following modifications of Headland's process for aconitia, it is with the view of furnishing them with a practicable means of supplying their own wants in regard to this potent alkaloid.

It is proper to premise that aconite root contains a green fixed oil, solid below 70° Fahr. which it is important to remove entirely from the solution before attempting to extract the alkaloid, by the agency of ether, a precaution only partly carried out in the published process of Dr. Headland. When a tincture of aconite root in alcohol of sp. gr. ·835, whether prepared in the cold by percolation, or by digestion at the temperature of boiling alcohol, as recommended by Headland, is evaporated to one half the weight of the root treated, a quantity of the green fatty oil above noticed separates and floats upon the surface of the liquid. Most of this may be strained out, if the temperature is