

ine, was obtained; he has further obtained from altered flesh, neuridine (not poisonous) and neurine (very toxic). This is nearly identical in action with muscarine and neurine normally found in the brain. The ptomaines from fish most poisonous are hydro-colline, ganidin, parvalin, and ethylene-diamine.

These discussions are most important, since we will find gastric disturbances, as indigestion, intestinal trouble and such fatal phenomena as follow putrefied foods, have a special cause in the presence in the intestinal tube in a greater or less degree of the alkaloids already mentioned. It is equally important that we should know the alkaloids produced in the dead human subject. We have choline, neuridine, cadaverine, putresine, saprine, trimethylamine, mydoline, and others, each specially marking some stage of the putrefactive period, the most poisonous being those forming after the seventh day of death. Guoreschi's classification gives up to date some twenty-eight ptomaines, which number is being almost daily added to. Unfortunately these do not in many instances present distinct chemical reactions, or reactions distinct even from the vegetable alkaloids. These ptomaines are in fact diamines belonging to the fatty series. Those salts are very oxidizable and endowed with great reducing power, are all soluble in alcoholic ether and most dissolvable in chloroform and amylic ether.

While important from the legal standpoint, it is yet more interesting to know that gastric indigestion, whether acute or chronic, results most probably from the absorption of ptomaines, whether introduced with food, or whether the stomach proves powerless to prevent the putrid fermentation of organic substances. Recall the symptoms caused by ptomaines and you will recognize those of colic, diarrhoea, intestinal hypersecretion, and the various troubles which mark intestinal disorders.

[We propose in our next number to present the study of leucomaines by the same author.—ED.]

#### HYGIENE.

##### Heating and Ventilation of Belvidere Isolation Hospital.

The recently opened Belvidere Isolation Hospital, Glasgow, for small-pox and fevers, is heated by hot water. The heating is by hot water circu-

lating in pipes which are led around the walls above the floor. This is derived from two hot water tanks heated by steam, and placed beneath the entrance hall of each ward, to which access is obtained from the outside by a stair leading to the basement. There are also open fires at either end of each ward. Pavilions with numerous windows and open to the roof are very difficult to warm sufficiently during winter. Experience at Parliamentary Road soon showed that it would be necessary to check radiation by the large glass area, and accordingly the device of double glazing each pane with an interval of three-quarters of an inch of air space was adopted. The wards at Belvidere are kept at 55° to 60° in the coldest weather. There are heating coils in the vestibule and bath-room.

Fresh air is admitted by direct openings beneath the windows, which are numerous, so that it passes over the heating pipes. These openings are controlled by an arrangement which admits of graduation and cannot be interfered with except by the nurse. There are skylights on opposite sides of the slope of the roof, Boyle's ventilators fixed on the ridge, and ventilating shafts alongside the chimneys, with openings controlled by movable louvres at the apex of the roof.

The principles kept in view in furnishing are simplicity, smooth surfaces, and facility of removal and cleaning. The bedsteads are wrought iron, the tables and chairs hardwood varnished. In children's wards, iron cribs are provided, and pigmy forms and tables suited to their size. All cupboards, presses, etc., are movable on iron rollers like American trunks. The mattresses are stuffed with straw, the pillows with chaff. They are renewed whenever soiled. Wood wool was recently tried as a substitute for straw, but was found speedily to break down, and on account of the consequent expense and larger quantity and more frequent renewal, was not adopted.

##### Air Currents in House Atmospheres.

The following is an extract from an article on "House Atmospheres or Artificial Climates," read by Dr. P. H. Bryce at the Washington International Medical Congress :—

Perhaps there is no one feature which so well illustrates the difference between external and internal air, and can be appreciated so readily by the ordinary observer, as the difference between the