

In the medicinal treatment of pulmonary and other forms of tuberculosis, each case must be carefully considered in all its bearings. Frequently at the time the patient seeks advice the appetite is poor, the digestive powers are weak, and the bowels act irregularly. In such cases great good can often be done by the administration of an alkali in combination with a bitter infusion before meals. A mixture containing 15 grains of bicarbonate of soda and 3 minims of dilute hydrocyanic acid to an ounce of compound infusion of gentian is largely prescribed at the Brompton Hospital. A simple mixture of this kind often does much to restore the appetite and improve the powers of digestion, and thus paves the way for other remedies.

The bowels are often constipated and an occasional aperient is necessary. Aloes and cascara sagrada are the most useful remedies, and pills containing one or other of these ingredients in combination with nux vomica and belladonna may be prescribed, to be taken at bedtime. If the bowels are loose the subnitrate, the subgallate, or the carbonate of bismuth may be ordered along with a few drops of tincture of opium, or of the tincture of chloroform and morphine. On the whole, except in the later stages, and when ulceration of the intestine has occurred, constipation is more usual than diarrhoea.

Cod-liver oil has now for half a century played a leading part in the treatment of tubercular diseases in general and pulmonary tuberculosis in particular. Although used as long ago as 1772 in the Manchester Infirmary as a remedy for chronic rheumatism, it was not until about the year 1841 that it really came within the sphere of practical therapeutics, when Dr. Hughes Bennett, of Edinburgh, advocated its employment in the treatment of gout, rheumatism and scrofula. How little was known of it previously is shown by the fact that a writer in the *London Medical Gazette* in 1839, referring to the use of *oleum jecoris aselli* in Berlin, said it was unknown to what ingredient *ass' liver* owed its efficiency, but perhaps it was to the presence of a small quantity of creosote!

Cod-liver oil improves the condition of the blood, and patients previously anæmic often

regain a healthy color under its administration. It promotes nutrition and metabolism, and has a tendency to cause the deposition or formation of fat in the body. Its action in tuberculosis is probably altogether an indirect one, depending on the improved condition of the blood and general nutrition which it brings about. Dr. C. J. B. Williams from an experience of forty years, concluded that cod-liver oil was a most powerful agent in the treatment of phthisis. In the first decade of this period of forty years the beneficial effects of treatment were very limited, and were chiefly confined to incipient cases, life being rarely prolonged beyond the duration of two years. In the next decade a marked improvement took place, apparently in connection with a more liberal diet and the use of mild alterative tonics. During the latter twenty years, with the introduction of cod-liver oil, the average duration of life in phthisis was quadrupled raised from two to eight years.

It is generally in text-books that cod-liver oil consists of olein, palmitin, and stearin, with traces of iodides and biliary principles. The glycerides mentioned are those which form other animal fats, such as mutton suet, goose grease, or lard, the firmer fats having a larger proportion of palmitin and stearin, the softer more olein. The question at once arises. Why, if cod-liver oil consists of the same bodies as other animal fats, should it be therapeutically so much their superior? Very various answers have been given to this question. Some have said that on account of the presence of biliary principles, cod-liver oil is more easily assimilated and digested than the other fats. It is contended, however, that neither bile pigments nor bile acids are really present, and that the play of colors observed when a drop of sulphuric acid is added to a few drops of the oil on a porcelain slab is due to the presence of cholesterolin, a peculiar pigment called lipochrome, and fatty acids.

Others, again, have alleged that the beneficial action of the oil is due to the iodine it contains: but the quantity actually present is extremely minute, never exceeding one part in two thousand, and it is extremely unlikely that such small quantities of iodine could impart any special virtues. Still another