

years sanocrysin has been used in much smaller doses than it was when first introduced and toxic manifestations are correspondingly milder. Some observations by Malik and myself (1930) showed that small doses of sanocrysin do not usually exert any deleterious effects upon the functions of the liver. In view of these facts the following instance of the occurrence of jaundice during sanocrysin treatment is of interest.

The patient, a female, aged 20, was suffering from extensive chronic pulmonary tuberculosis with rather severe systemic disturbance and numerous tubercle bacilli in the sputum. The resting temperature was irregular and occasionally went as high as 103°F. in the evening. On 28th February, 1930, she was given 0.05 gm. of sanocrysin. There were no untoward effects and the patient began to improve. The temperature fell gradually, the highest point reached three days after the injection being 101°F. On 5th March, 1930, 0.1 gm. was given. There was no discomfort and the improvement was maintained. On 13th March, 1930, the dose was increased to 0.2 gm. The temperature rapidly rose two degrees to 101°F. two hours after the injection, but soon came down again. There were no other symptoms. On 21st March, 1930, a dose of 0.35 gm. was administered at 1 p.m. This made a total dosage of 0.7 gm. One hour after the injection the temperature rose from 98.6°F. to 102.8°F. Albumin was detected in the urine 3 hours later. At 8 p.m. the patient complained of itching all over the body and moderate diarrhoea set in. During the following two days the itching and diarrhoea became worse and jaundice appeared. The urine on the 23rd March, 1930, contained a fair amount of albumin, numerous granular casts and bile. The diarrhoea began to pass off and had disappeared on 25th March, 1930. The itching persisted until about the same date. The jaundice, however, increased in intensity and the liver became enlarged. The urine at first contained urobilin as well as bilirubin and the stools were slightly pigmented. After a few days the stools were free from pigment and urobilin consequently disappeared from the urine. This now contained a large amount of bile pigment. On 29th March, 1930, there were 8 Van den Bergh units of bilirubin in the blood plasma. The pigment gave a "prompt biphasic" reaction. During the following week the jaundice became more marked, the plasma bilirubin rising to 10 units on the 5th April, 1930. The patient felt ill, was nauseated and occasionally vomited. The temperature reached 103°F. to 104°F. in the evenings. The diet was chiefly milk, but as much glucose was given as could be retained. A 10 per cent. solution of sodium thiosulphate was administered as follows:—3 c.c.s. on 31st March, 5 c.c.s. on the 2nd April and 6 c.c.s. on the 4th April, with the object of re-converting the gold into a non-toxic compound. Improvement set in about the 8th April. The temperature became lower (101°F. or so in the evenings), the urine gradually became clearer and pigment began to appear in the stools. On the 13th the plasma bilirubin had fallen to 5 units, still giving a "prompt biphasic" reaction. The urine contained a fair amount of bile-pigment and much urobilin. On the 17th the patient's condition was much better and she was well on the way to recovery. The temperature ranged from normal to 99°F., and the liver had returned to normal size. On the 21st there were 2 units of bilirubin in the plasma.

The type of the Van den Bergh reaction and the variation in pigment excretion as well as the general symptoms indicate that the jaundice was of the toxic variety. It resembled an attack of so-called "catarrhal" or common infective jaundice, but, occurring as it did, during

the course of sanocrysin treatment, a direct toxic action of gold on the liver cells must be considered. Although pigmentation of the conjunctivæ was not seen until two days after the fourth injection, a latent icterus must have been present during this period. It will be noticed that while the first two injections caused no symptoms, fever followed the third and fever, albuminuria and jaundice succeeded the fourth. This series of events suggests a cumulative action of the drug. It is, on the whole, probable that the sanocrysin either caused the condition, or lowered the resistance of the liver cells to some infective or toxic agent. Although small doses of this substance do not usually cause appreciable hepatic injury, the possibility of this occurring should be borne in mind, especially when larger doses are given, or when gastro-intestinal symptoms follow the injections. Under these circumstances the resistance of the liver should be kept up by administering glucose or foods rich in carbohydrates so as to build up a store of glycogen which, as Whipple has shown, exerts a protective action on the hepatic cells.

My thanks are due to Dr. Shujaat Ali, House Physician in our tuberculosis wards, for detailed notes of the case.

REFERENCES.

- The gold treatment of tuberculosis, Preliminary report by the Medical Research Council (1925). *British Med. Journ.*, Vol. I, p. 735.
The gold treatment of tuberculosis, Second report by the Medical Research Council (1926). *British Med. Journ.*, Vol. II, p. 158.
Hughes and Malik (1930). The effect of sanocrysin on the efficiency of the liver. *Indian Med. Gaz.*, Vol. LXV, p. 133.

GANGLION-LIKE SWELLINGS IN LEPROSY.

By E. MUIR, M.B., Ch.B., M.D. (Edin.), F.R.C.S. (Edin.),
Research Worker in Leprosy, School of Tropical Medicine and Hygiene, Calcutta.

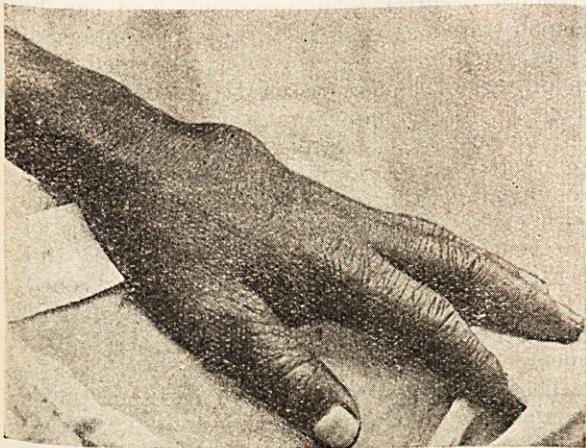
As far as I am aware this condition, which is in my experience fairly common in leprosy, has not been described in medical literature.

The condition described in medical books as *ganglion* is generally situated at the back of the wrist or intercarpal joints. It is a cystic swelling, either hard or soft according to the tension of the fluid contained, and is caused by cystic degeneration of the synovial membrane of either the tendon sheaths or the intercarpal joints. It is generally chronic in character and is seldom accompanied by pain or other inconvenience.

The ganglion-like swellings (see illustration) found in leprosy are similar to the above in position, in appearance, and on palpation. Sometimes they are chronic in nature, but at other times they appear suddenly and again as suddenly disappear.

Apparently they are generally, if not always, connected with leprosy disease of the median

nerve. If the disease in this nerve is chronic in nature the swellings continue for a long time. On the other hand I have seen a case in which they appeared suddenly at the same time as a leprous reaction in the median nerves of both hands; as the reaction passed off after a few days the ganglion-like swellings also subsided.



I have not yet had an opportunity of investigating the histology of this condition, and am unable to say to what extent it is due to involvement of the tendon sheaths and to what extent the intercarpal joints are affected, but apparently the condition is due to the latter.

Similar swellings are sometimes noticed in the region of the ankle joint; these occur also in the nerve form of leprosy.

MARRIAGE FESTIVALS AND THE SPREAD OF CHOLERA.

By S. L. SARKAR, M.A., L.M.S. (Cal.),
Civil Surgeon, Noakhali.

THE sanitary consciousness of the educated section of the people of this country is being gradually developed. So it may be of benefit if medical officers report instances showing how the habits of people help the spread of cholera epidemics. The following is an illustration, for the materials of which I am indebted to Dr. Nabin Chandra Das Gupta, the medical officer in charge of Joyag dispensary.

There was recently an "epidemic" of marriages in this province. In this connection there was a wedding in the village of Joshna. The guests collected a few days before the date of the wedding. The people of villages are not in the habit of reserving tanks exclusively for drinking water. However, in ordinary times, the human contamination of a tank is slight, and the tank water has the chance of purification from organic impurities caused by bathing, etc., by the natural process of exposure to the sun's rays, and to a certain extent by the oxidation of the impurities. But the case is otherwise when too many people

collect in a village and use the tank both for bathing and drinking purposes. Moreover, when there is a collection of people in a village, there is a chance of a carrier arriving from outside. It appears that something of the kind happened in this case. On the 24th February, which was the day of the marriage, two of the guests were attacked with cholera and died on the 28th.

The occurrence of cholera cases in the village did not cause the postponement of a second marriage in another house for which guests also collected. Two of the guests died of cholera on the day following the wedding in this house also.

A married girl, who was a guest in the latter house, on the 2nd March went to a distant village to her father-in-law's house. On reaching this place she developed cholera and died on the 6th March. A relative went to attend her from a neighbouring village on the 3rd March and, on returning to his home on the 6th, fell sick on the 7th and died of cholera on the 9th March.

FOREIGN BODY IN THE EAR A CAUSE OF PERSISTENT HICCOUGH.

By M. ABDULLA, L.M.&S. (Hyd.), L.C.P.&S. (Bom.),
Medical Officer in charge, Municipal Hospital,
Vaniyambadi, North Arcot District.

IN citing this peculiar case of persistent hiccough I wish to emphasise the advisability of thoroughly examining each and every organ that is supplied by the vagus and phrenic nerves, and their various minute branches. Hiccough is sometimes very distressing and may sometimes end in death, not of itself, but by the secondary effects it produces.

Hiccough is a symptom and not a disease, and it is produced as a result of sudden contraction of the diaphragm and glottis subsequently. These contractions are brought about by certain irritant factors. Through the phrenic nerve the diaphragm is made to contract, and through the vagospinal the glottis. In addition to these, numerous peripheral irritations produce hiccoughs, working through the numerous centripetal paths. As a general rule thoracic and abdominal organs, that are mainly or partly supplied by these nerves, are generally at the bottom of the mischief. Hysteria or neurosis, tabes dorsalis, uræmia, and chronic degenerations of the medulla oblongata are rare causes. Meningeal, auricular, pharyngeal and cardiac causes are still more rare, and a foreign body in ear as a cause of persistent hiccough is unheard of.

Mr. M. S., Muslim, aged about 23 years, was suffering from persistent hiccough for about 18 days continuously. Many sedatives, both gastric and nervous, were tried with complete failure, and mechanical interference with movements of the diaphragm, e.g., nose, lips, traction of tongue, abdominal pressure, etc., did no good. Chloroform, brandy, spirits of ammonia, effervescing fluids, bromides and other known hypnotic drugs failed to stop the diaphragmatic spasms. Various injections