

Madras is the only Province that has not got a special part of its register for health visitors, we feel although they may register their training as an extra qualification this is a pity. Judging by the figures in other Provinces health visitors as a whole must be very tardy in registering and we advise all those who have not done so, to register at once.

We look forward to a great future, the different Governments are considering Nursing reconstruction and are not only consulting the Association, and the senior members of the Nursing Profession, but are co-operating with them.

Such matters as the raising of the standard and status of A standard nurses and of training and registering B standard nurses, the re-grading of registers, the provision of preliminary and post-graduate schools and, last but not least, the provision of adequate nurses for the hospitals and districts are being seriously considered.

The Health Survey and Development Committee have appointed a Nursing Sub-Committee, the members of which are:—

Miss Wilkinson, President of the Trained Nurses Association of India.

Miss Hutchings, Chief Lady Superintendent, A.N.S.

Miss Craig, Director of the School of Nursing Administration.

With such splendid advisors who have all the work and weight of the Association behind them, the Indian Nursing Profession will be steered in the right direction and we sincerely hope the authorities will take their advice and abide by it.

Dracontiasis or Guinea Worm Disease

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Introduction.—Guinea worm infection or Dracontiasis, as it is scientifically known, is one of the oldest tropical diseases. It is caused by the invasion of the connective tissue by a long thin worm (*Dracunculus medinensis*) the female of which comes to the surface of the skin, where it causes a blister. Although it is not fatal, it is responsible for a good deal of suffering and physical deformity. Medical aid and advice are not available in the infected villages, and the people fall easy victims to the ravages caused by this disease, therefore the dissemination of accurate knowledge of the disease and the methods of treatment and prevention of the infection among the people is, therefore, of great importance.

Parasites and their life history.—A fully grown female worm is 12 to 48 inches long and about 1/17 inch in diameter. The worm is round, smooth and of a milky white colour. The head end is tapering and rounded, the tail is also tapering and curved like a hook. The worm is packed with embryos from head to tail, roughly about three million embryos per worm. Embryos are 0.6 m. m. long. They have a flattened body and tapering tail. They lie coiled upon discharge from the worm, but they soon stretch out in water and begin to swim vigorously with a tadpole like motion. They can live in clean water for a week, and much longer in muddy water. The male worm has not so far been found in man. It is much smaller and thinner than the female, the tail end being spirally curved and it is of no importance in producing diseases. The embryos attack a small crustacean called a cyclops. When a person drinks infected water, the cyclops on entering the stomach are killed by the gastric juice, but the worms are not killed, on the contrary, they are activated by the acid medium and pass from the stomach to other parts of the body.

Cause of Guinea worm infection.—If some cold water is applied to the ulcer from which the guinea worm is protruding, a whitish liquid will be ejected from near the head of the worm. This liquid contains millions of embryos. When a patient with a worm protruding from the ulcer enters a pond or step well, the worm immediately discharges embryos on coming into contact with water. When penetrating the body it is about 1/12 of an inch long. In one year it is mature and the female worm then measures about 3 feet. The disease is wide spread mostly in areas where there is a water scarcity, low rain fall and rocky soil. The infection is completely absent in well watered areas. It is practically confined to villages which generally do not have an adequate and protected water supply. The source of water supply in a village is usually

either a tank or a well. In most of the villages there are tanks with steps all around them. Smaller villages have step wells. The people descend the steps into the wells or tanks, to fill their water pots and often to wash and bathe. In these step wells there is considerable personal contact, between the carriers of the infection and the water. Guinea worm infection is common among people who use this system of water supply for drinking purposes.

Sites where the worm may appear.—In about 90 per cent cases the worm appear on the lower extremities as these are the parts of the body which commonly come in contact with water. The worm may appear however in other parts, for example, on the arms, chest, back, abdomen, lion, groin, very rarely in the neck head, tongue and eye lids.

After effect—Sometimes, the disease ends with complications or even in permanent deformity. The majority of complications and the after effects of Dracontiasis are cellulitis, arthritis, synovitis. The patients develop fixed joints (ankle or knee) as a result of prolonged immobilisation.

Signs & Symptoms.—The incubation period which usually lasts one year. The onset of symptoms occurs however, some hours before the localised manifestation of the parasite under the skin. The patient has a feeling of intense itching all over the body. This may be accompanied by nausea, vomiting, difficulty of breathing, giddiness and fainting. These symptoms are due to the poisons excreted by the worm. The other prodromal symptoms consist of redness of the skin and a burning sensation, over where the worm is lying in the connective tissue. When the blister is opened, a red raw ulcer is exposed, near the middle of the ulcer there is an opening, which communicates with the tunnel in the tissue in which the female worm is found. The rupture of the blister relieves the toxic symptoms.

Treatment. Removal of the worm—A common practice in the village is to wind the worm on a small stick as soon as the head emerges from the blister and to continue the process by giving a turn or two to the stick every day. The injection of perchloride of mercury solution, 1 in 1,000 into the worm kills it, after which it can be easily extracted the next day. Various antiseptics such as Chriosol, 1 in 500 and acriflavine, 1 in 1,000 are used.

A new method is recommended in the following technique under aseptic precautions. First infiltrate the skin overlying the worm at some distance from the guinea-worm, with cocaine and adrenalin (2 c.c. of 1 part cocaine and 1 c.c. of 1 in 2,000) adrenalin. An incision is then made at right angles to the line of the worm, the skin is exposed and the upper surface is incised longitudinally, a hook is inserted under the worm intermittent and traction and massage are employed. If the tail end of the worm is difficult to dislodge, another incision is made near to it and the intermediate portion of the worm is removed. It is important that the head end of the worm should be removed through the sinus outwards and not in a reverse direction. Another method is to locate it with the help of x-ray and dissect out the worm, after an injection of 2 c.c. 10 per cent collargol. Sulphanilamide has been found to give satisfactory results in dealing with septic complications.

Prophylaxis—For the prevention of infection, it is necessary that the sources of drinking water should be protected from pollution and people with guinea-worm ulcers must not be allowed to come in contact with the local water supply. They should be prevented from washing themselves near the wells and from entering them; and the people should not use the infected water for drinking purposes. The cyclops can be removed or killed (chemical method) readily by various chemical methods such as caustic, Pottash and Perchloride copper sulphate, 1 in 10,000 of water, chlorine in strength of 5 parts per million of water, 60 grains of lime to a gallon of water.

Biological method.—Introduction of barbel fish (*Barbus puckerli*) into wells. Whenever it is possible the most satisfactory method of prophylaxis is to improve the condition of the water supply by the provision of the pipe system on tube wells. Next to this measure is the conversion of step wells into draw wells. Steps wells should be totally abolished. For individual prophylaxis, boiling or filtering of water for drinking purpose is recommended. If adequate attention is paid to mass education and instruction of the villagers and village authorities, this infection which causes suffering to thousands and cripples a large number of people annually in the rural areas, could be completely eradicated.