country proves that it can be produced by dirt alone, without the addition of crowding, confinement, and bad air; but none of the cases were as severe as those which one sees in jails, or among sailors or soldiers at sea.

With regard to parasitic diseases, I have only seen one case of itch, and that in a Cashmere sepoy; and I believe that intestinal worms are unknown. Goitre and cretinism, which one would expect to find so prevalent in a country where the people live so often in narrow confined valleys, and drink only snow water, are very rare. I have travelled through the greater part of Ladak, and have seen very few goitres, and those very small ones; and I have seen no cretins, and hardly an idiot; although in the lower Himalayan ranges, as at Kangra, Kullu, and about Simla, goitre is very prevalent, and cretins not uncommon. In Ladak the mountains are chiefly granite, clay, and mica slate, and metamorphic rocks; there is very little limestone. Has the absence of lime in the water anything to do with the absence of goitre? I may notice also that I have not heard of a single case of gravel or stone; and did the disease exist, it would certainly have been brought to my notice. The water, besides containing no lime, is almost everywhere more or less impregnated with soda salts; can this in any way prevent the formation of goitre and stone in the bladder?

*Tumours.*—Of the eight cases five were malignant, three of which I removed by operation; and three which I also removed were fatty. Cancer would thus seem to be rather prevalent.

*Cataract* is decidedly common in old people, and nearly all that I saw were cases of hard senile cataract. I have operated on the eyes of six patients with fair results. I operated by the linear incision, as recommended by Dr. Macnamara. The other eye diseases presented nothing remarkable.

*Bronchitis* and lung diseases are rare and of a mild nature. I have seen nothing resembling phthisis.

*Dyspepsia*, of a most obstinate and troublesome nature, may be called one of the chief diseases of the land, and I heard the same of Lahoul from the Moravian Missionaries there. The symptoms are generally constipation, weight and pain in the stomach, especially after eating, distention, and pain in the chest, headache, languor, and many other subjective symptoms,—all due to the same cause, and often lasting for years and causing very great distress. It is doubtless caused by bad diet,—the everlasting and unvarying *suttoo*. One sees a man with a lump of uncooked dough as big as his head, and this he swallows in large pellets, washing them down with cold water, and this constitutes his sole diet for days together. The mere sight conjures up in one's mind that bugbear of the conquerors of India—indigestion and all its attendant horrors.

The number of decayed teeth one meets with is remarkable. The sufferers allow them to be extracted without any hesitation. The people show very great fortitude in enduring pain. Boils, abscesses, sores, and skin diseases are all very infrequent, the last especially so. All wounds seem to heal rapidly, in spite of neglect.

Of the total number of 430 patients treated, 329 were males, 95 females, and only six children under 12 years of age. As I have before noticed, children do not abound; and as there never was the slightest objection made to bringing them before me, I can only conclude that they are remarkably free from disease. There has been a daily average attendance of 30 patients during the two months. I am not at present able to give any information on the subject of parturition and infantile mortality, nor on that of the birth and death rates of the people; and besides I have, I fear, already extended my notes far beyond reasonable limits.

*September 14th*, 1867.

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## STRAY NOTES ON CHLOROFORM.

By W. J. Elmslie, M.A., M.D.,

*Medical Missionary, Kashmir.*

I. *Evaporation of Chloroform.*—Quite recently I had occasion to enquire of a friend of mine, who had just come from the plains to spend the season in Kashmir, if he had any chloroform in his possession. He replied that he had, and immediately went off triumphantly to fetch his little portable medicine chest. Fancy his astonishment and disappointment when, on examining an eight-ounce bottle which he had caused to be filled with the invaluable anæsthetic before entering upon his journey to the hills, he found it completely empty, the chloroform having entirely volatilized. If either my friend, or the chemist who supplied, the chloroform, had been acquainted with a little practical fact this expensive waste and vexatious disappointment would have been most effectually prevented. The specific gravity of chloroform is about 1·5, being therefore about one-half as heavy again as pure water. We can take advantage of this well-known fact to prevent the evaporation of my chloroform, by pouring a small quantity of pure water on the top of the chloroform, sufficient to cover the surface completely. The water being so much lighter than the anæsthetic, floats on its top, and thus effectually prevents its evaporation. By the adoption of this very simple contrivance, the saving in chloroform will be considerable. There is one objection, and only one, to the use of pure water for this purpose, and that is, that chloroform is slightly soluble in water. Professor Christison states that one part of chloroform is soluble in two thousand parts of water. This solubility is therefore so very slight that the objection to the employment of water for this purpose is altogether inconsiderable, especially when we remember that the quantity of water required to cover the surface of the chloroform is proportionately so small. It is advisable to employ the same water till it has evaporated, and consequently requires to be renewed, for the obvious reason that it is already saturated with chloroform; any water that may flow out of the bottle along with the chloroform should therefore be immediately returned. The adoption of this very simple contrivance in a hot climate, like that of India, will lead to no inconsiderable saving in the consumption of chloroform in dispensaries and hospitals, where much of this expensive and indispensable anæsthetic is annually consumed.

II. *Exhibition of chloroform in the dressing of wounds in children.*—Old and young in Kashmir are in the habit of carrying about with them, almost continually, portable earthenware braziers, which they call *kangris*. This custom gives rise in the adult to epithelioma, while in the very young severe and extensive burns are of frequent occurrence. A case of this nature happened some time ago. Several days since the mother of the little sufferer brought him to the Medical Mission Dispensary. The little fellow's right arm was united to his side from the shoulder to the elbow; chloroform was administered to him, and the binding cicatrix divided. So noisy, restless, and terrified is he whenever he is brought into the dispensary to have the wound dressed, that I deemed it advisable, both for his comfort and my own, to exhibit chloroform to him. We are thus enabled to dress the wound with more accuracy and comfort to ourselves, and with no pain to the little patient. I would strongly recommend this practice. It is noteworthy that the state of anæsthesia in such cases does not require to be so profound as when a surgical operation is about to be performed; so that comparatively little chloroform is needed.

III. *Chloroform in setting of fractures.*—I am at present attending another young patient in connection with the Medical Mission Dispensary, Sirinagar. Two boys were, three weeks ago, on a mulberry tree eating the fruit. The branch on which they were sitting suddenly broke, and they fell from a consider-

able height upon the hard ground. One of them was but slightly bruised. The other, my patient, received simple fracture in the middle of the shaft of the left femur. At first I purposed setting the fracture without the aid of an anæsthetic, but when the boy began to wince and to complain, on my very gently manipulating the parts, I changed my mind and exhibited chloroform. I had now such comfort in performing my work, that I have formed the resolution never to set a fracture of similar gravity, either in old or young, without exhibiting chloroform.

IV. *Chloroform in the violent headaches frequently occurring at the cessation of the menses.*—Some time ago a lady, of about 45 years of age, consulted me about a violent headache which every now and then attacked her, and which she described as likely to drive her mad. From the lady's age, and other well. known symptoms, I unhesitatingly came to the conclusion that this very severe periodic headache was due entirely to the cessation of the menses. Her bowels, food, drink, clothing, bodily exercise, mental occupation, and general habits were all attended to, but still the headache continued to embitter her very existence. Knowing that, until this very critical period of life had been passed, it was hopeless to expect a complete cure, I thought of a palliative. A few whiffs of chloroform from a pocket handkerchief were recommended to be inhaled during the presence of the headache. Instant relief was afforded, and life was rendered bearable during the attack. Not only was the pain diminished and rendered bearable, but the attack was also shortened. From 10 to 15 drops of the anæsthetic were amply sufficient at a time.

V. *Chloroform in the severe headache of ague.*—I have, on several occasions, and in a similar manner, administered this invaluable anæsthetic in the severe headache frequently accompanying intermittent fever. The relief afforded has been instantaneous and marked, and most agreeable to the patient.

VI. *Mode of administering chloroform.*—I decidedly prefer the simple and safe mode employed by Professor Sir J. Y. Simpson in the Infirmary of Edinburgh. It is as follows :—

The patient having been properly placed, and the clothes suitably arranged, the nose and mouth should be besmeared with oil to prevent excoriation of the skin, should the chloroform come into immediate contact with them. A pocket handkerchief or other thin linen is then placed over the lower part of the face and chloroform poured upon it, sufficient to wet the cloth over the nose and mouth. As soon as this quantity of chloroform has all been inhaled, and has produced its anæsthetic effect (which will be in 20 seconds after inhalation), a little more is poured upon the cloth, and its effect carefully watched; and so on until the patient is sufficiently anæsthetized for the operation, whatever it may be. Sir J. Y. Simpson is always far more solicitous about the *breathing* of his patients than about the pulse, important though that also be. Stertorous breathing, even in a small degree, is always to be looked upon as an unmistakeable warning of the near approach of danger. The advantages of this mode of administration are, *first*, that the anæsthetic is administered slowly. This is of the highest importance when we remember that it is 20 seconds after inhalation before chloroform manifests its anæsthetic effects, and that the presence of thirty minims of chloroform, at one time, in the blood of the inhaler are sufficient to arrest respiration. *Secondly*, an ample supply of fresh air is always ensured. The handkerchief, or whatever other fine cloth is employed, is so thin that the patient can breathe through it with facility. The importance of this fact cannot be over-estimated when we remember that Dr. Snow ascertained that a patient cannot breathe an atmosphere in which there is more than 5 per cent. of chloroform, without very considerable risk of life. It is a noteworthy fact, as stated by Dr. Sanson, that of 80 deaths from chloroform 78 occurred after its exhibition on a napkin, sponge, or towel, the reason partly being, in all probability, that the necessary proportion of atmospheric air was prevented from entering on account of the thickness of the material employed.

SIRINAGUR, KASHMIR, 20*th June*, 1867.

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## A FEW PRACTICAL REMARKS ON THE TREATMENT OF GUINEA-WORM.

BY MEER USHRUF ULEE,

*Lecturer on Practice of Medicine in the Agra Medical School.*

THE prevalence of this parasite has been associated with the existence of volcanic rocks. It is much more frequent in the coast of Africa and Arabia than elsewhere. In India it prevails in Madras, Bombay, and Rajpootana.

Though guinea-worm frequently causes extensive local inflammation, accompanied by high irritative fever, it is sometimes attended by profuse suppuration, sloughing, or gangrene, and occasionally produces permanent contraction of the knee or other joints; it very rarely indeed ends fatally. I have only seen one fatal case in upwards of two hundred treated by me in the Ajmere Dispensary. This case died from exhaustion produced by the profuse discharge from an abscess in the thigh.

It is more frequently met with amongst adults than among children, and among men than among women. The most frequent seat of the worms is the longer extremities. The issue of the worm from the orbital cavity, scrotum, and tongue is very rare. The localization of the worm in the great cavities is very seldom observed. I have seen a patient who was confined to his bed for seven years, owing to the successive exit of the worms from different parts of the body. The length of the worms varies from 18 to 32 inches in general.

Sometimes the guinea-worm may shrivel and become cretified, and enveloped in areolar tissue. I have seen several cretified worms of long standing situated over the shoulder or on the trunk.

Asafœtida has been much esteemed by Natives as a prophylactic. In my opinion, this medicine and pure water for drinking are the best prophylactics for this disease.

When the loop of the worm can be felt just under the skin, and is not imbedded deep among the muscles, the best plan of treatment is to cut down upon it, when by passing a probe underneath it, the extraction of the whole worm can be made, in a few minutes, with great facility. This avoids the delay attending its natural exit, and the risk of the worm being broken during its gradual extraction.

When the worm is located below the ankle or knee, or in the popliteal region, and at the same time imbedded in the substance of the muscles, and looped round the tendons, we should never attempt to extract it by incisions, otherwise it will surely break, and the consequent extravasation of its contents into the surrounding textures invariably produces considerable inflammation, ending in suppuration. In such cases the best plan is to wait for the natural process of expulsion; and when the usual bullæ have formed, and the worm begins to protrude, it should be gradually extracted in the usual manner, the extracted portion being wound round a small dossil of lint or rag. At the same time, to facilitate the exit of the worm, the surrounding parts should be well rubbed with sweet-oil.

Sometimes the worm breaks during its extraction. This is especially likely to happen when its structure has been softened by the repeated application of poultices, for which reason I prefer to apply plantain leaves to the part, so as to keep it cool and dry. To check the inflammation which follows the breaking of the worm, I have often applied an embrocation composed of equal parts of red minium and country soap. This application, in my practice, never failed to prevent the bad effects of inflammation.