ARSENIC IN FLY-PAPERS.

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THE following case is recorded with the object of drawing attention to a source of poisoning not commonly known, namely, the presence of a soluble form of arsenic in many of the sheets sold under the name of "fly-papers".

A boy of eight years was admitted to Charity Ward, St. Thomas's Hospital, at 7.15 P.M. on the 18th May last, unconscious, and to all appearance suffering from belladonna-poisoning. It was asserted that the symptoms had come on at about 5 P.M.; and, as the friends had already suspected poisoning, three explanations were offered by them for the information of the hospital officials.

1. At 10.30 A.M., the child had been challenged by his sister to drink the water from a plate in which a fly-paper was soaking. He was said to have drunk some: an example which was not followed by his sister.

2. The sister was attending at the Royal South London Ophthalmic Hospital, and had been there supplied with a green lotion for application to the eyes. This lotion, according to the mother's statement, was kept in a cupboard, and inaccessible to the child. It had been placed in the cupboard at 4.30, on her return from the hospital. The child had been strictly forbidden to touch this lotion.

3. The friends of the patient were inclined to think that some sweetmeats of which the child had partaken in the afternoon were the vehicles of the poison.

The history and symptoms were collected by Mr. Walter Tyrrell and Mr. W. H. Battle, house-physicians in the hospital.

It appeared that towards 5 P.M., shortly after he had eaten some of the sweets mentioned, his mouth became dry. This led him to drink a quantity of water, which made him no better. Presently he began to feel giddy and to fall about, not knowing where he was. He dared not sit, on account of a feeling that he should tumble off from the chair; and he felt secure only in the kneeling posture. He had no pain, no vomiting, no diarrhoea. He became incoherent in his talk for the first time at 5 P.M., and soon after that symptoms of retention of urine attracted attention. As he was rapidly becoming helpless, he was led or carried to a medical man, and passed on by his assistant to the hospital.

By this time, 7 P.M., he was quite unconscious of what was passing around, not showing the least recognition of his mother; and he could not walk or stand. The pupils were extremely dilated, and insensible to light. The ophthalmoscope was used without the slightest sign of annoyance to the patient. No abnormality was detected within the eyes. The conjunctivæ retained their sensitiveness, and when they were touched the patient turned over, put up his hands, and moved his head. The skin of one of the legs being pricked, the patient showed decided symptoms of displeasure, moved the leg away, and for the first time made a little noise. He could not be induced to protrude his tongue, but it could be seen and felt to be perfectly dry. He could not be made to answer questions, and indeed did not utter a word. The pulse was 72, regular and full; the breathing regular, and not stertorous. The bladder was much distended, a little urine dribbling from the penis. His condition was from these symptoms inferred to be due to belladonna-poisoning.

The urine having been drawn off (and, unfortunately, thrown away), a hot bath was administered. This was followed by noisy delirium. He was now ordered to have five drops of tincture of opium every two hours as long as he was noisy; but, after the first dose, the treatment was changed, and a sixth of a grain of extract of physostigma was given every two hours during the continuance of the noisy delirium. The bladder was emptied again not long after, and the urine was found not to cause dilatation of the pupil of the eye of A. B., into which a few drops were introduced. The water from the fly-paper also had no effect; but the lotion referred to speedily caused dilatation in the eye of C. D.

The noisy and very troublesome delirium lasted till 5 A.M., but the patient did not return to anything like natural consciousness till 11 A.M. He then voluntarily stated that he had drunk the liquid from the fly-paper plate; and, in answer to questions, denied altogether acquaintance with the eye-lotion. Control of the bladder was now re-established, and the physostigma was discontinued. On the 20th (third day), although he could stand, he staggered in walking; and it was not before the 23rd that he became quite steady on his legs. After that, his recovery was uninterrupted; and he was discharged on the 25th.

REMARKS.—There can be no reasonable doubt as to the poison which gave rise to the symptoms above recounted. It was certainly

some preparation containing atropia. The sweets were not in fault, for they were taken freely by the sister of the patient and by others at the time and subsequently without bad results. The lotion undoubtedly contained belladonna, apparently in the form of the green extract rubbed down with water. And, as no other substance comprehending belladonna in its composition was discovered, the lotion, in spite of the contrary assertions of the children and the mother, was almost certainly the poisonous agent. The fly-papers incriminated were, as well as the lotion, examined chemically by Mr. Plowman, our able and conscientious apothecary. And I cannot do better than quote passages from a letter addressed by Mr. Plowman to the *Pharmaceutical Journal* of June 22nd, 1878, in which his conclusions are fully stated.

"My particular object in writing this letter is to call attention to the fact that fly-papers commonly contain arsenic. This may be well-known to the majority of your readers, but it was certainly unknown to myself and to several to whom I have spoken on the subject. In fact, one stated that he had last week informed a lady customer that fly-papers were only fatal to insect life. In order to ascertain whether fly-papers generally contain arsenic, and, if so, to what extent, I procured six samples, bearing the names of six different makers. In five of the six I found arsenic; and, on estimating the amount, obtained the following results, being in each case the mean of two experiments: No. 1, 1.92 grains; No. 2, 2 grains; No. 3, 2.95 grains; No. 4, 6.25 grains; No. 5, 5.36 grains. The sixth kind examined was *paper moure*. This contained no arsenicum in any form whatever. It was very bitter to the taste; and, as it contained no strychnia, I inferred that it contained some preparation of quassia. I endeavoured to isolate quassia from a number of the papers, but towards the end of process lost the whole, and I have not had time to repeat the operation. In all the arsenical fly-papers, the arsenic existed chiefly as free arsenic (As_2O_3), for the aqueous solutions were faintly but distinctly acid; and, though nitrate of silver gave reactions for arsenites, ammonio-nitrate of silver gave very much more decided reactions. . . .

"I have no wish to cause additional restrictions to be imposed on the chemist in the carrying on of his business; but, supposing that a chemist sold some of No. 4 paper without registering the sale, etc., and further, supposing that a child swallowed the liquid with fatal results, and that an inquest was held, there is much probability that the coroner would severely censure the seller, although he (the seller) might be perfectly ignorant of the poisonous nature of the fly-paper. Independently of this consideration, I think that there are few men who would wittingly take the responsibility of selling a number of sheets, some of them containing over six grains of arsenic, to be moistened with water and distributed in open plates and dishes throughout dwelling-houses.

"I consider, therefore, that it behoves all chemists in business to ascertain the nature of the fly-papers which they sell, and to cease retailing those which may be found on examination to contain a poison which might be fatal to human life."

When it is seen that as much as five grains of a soluble preparation of arsenic have been found in a single paper, and that this paper when used is by direction placed in a plate containing water, the existence of a serious public danger is evident. And, again, when the presence—the often dangerous presence—of arsenic in wall-papers, dress-colourings, and other fabrics is considered, the necessity for legislation in restriction of the use of this deadly substance appears to be pressing.

ON ULCERATION OF THE FRÆNUM LINGUÆ IN PERTUSSIS.

By ROBERT CORY, M.B.Cantab.,

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DR. ELLIOTT having lately added his experience to that of Dr Maccall and of Dr. Morton with regard to the presence of ulceration on the frænum of the tongue in cases of whooping-cough, it may, perhaps, be of some service if I give my experience obtained from the children attending as out-patients at St. Thomas's Hospital.

The number of cases of whooping-cough during the last two years, in which the frænum of the tongue was examined, amounted to 84. Of these 84 cases, 27 of them had ulceration of the frænum, giving a percentage of 32.14. This, it will be observed, is greater than that of Dr. Elliott (25 per cent.), but considerably less than that of Dr. Maccall (44 per cent.), and of Dr. Morton (41 per cent.) I, however, agree with Dr. Morton in thinking that, if the cases could all have been followed up, the ulcer would have been found to exist even in a greater proportion than 41 per cent.; and I therefore look upon Dr.

Maccall's experience as the one most nearly approaching the truth. Cases which only come once to the hospital during the first week of the disease become classed with those which have no ulcer, although many of them no doubt have it developed later; indeed, as a matter of fact, the ulcer does not appear until the paroxysmal stage has existed for some days. The average length of attendance at the hospital of those having the ulcer was 6.5 weeks; but, among those not having it, it was 4.8 weeks.

The following table shows the numbers having the ulcer at different ages.

During first year ..	No. having Ulcers.	
.. .. .	..	0 out of 10
.. second year ..	..	4 " 14
.. third year ..	..	7 " 16
.. fourth year ..	..	5 " 14
.. fifth year ..	..	7 " 15
.. sixth year ..	..	2 " 5
.. seventh year ..	..	2 " 8
.. eighth year ..	..	0 " 2

Among the 84 cases, 45 were females and 39 males, and the ulcer of the frænum was present in 16 out of the 45 females, and in 11 out of the 39 males.

From the foregoing table it would appear, that the third, fourth, and fifth years are the ones during which the ulcer most frequently occurs.

That the cause of the ulceration is due entirely to the friction of the soft parts against the teeth I have myself little doubt, and can entirely indorse what Dr. Maccall says on this point. I have never seen the ulcer in a child before the lower incisors were cut, and, in two cases, where the lower incisors had entirely disappeared in children of three or four years respectively, the ulcer never appeared, although repeatedly looked for.

The manner in which children cough is a very important point in the production of the ulcer. Some children instinctively protrude their tongues as far as possible—especially is this the case in those of three or four years old, in whom the pharynx is small; but with older children the necessity for the protrusion of the tongue is not so urgent, and they have also, in one sense, a greater command over it; hence, in these latter, the ulcer is not so frequently formed. The time, also, at which the ulcer usually first appears, viz., during the second and third weeks, and its coincident disappearance with the spasmodic stage, is exactly what the mechanical theory requires.

Perhaps the inflamed and swollen orifices of Wharton's ducts, opening as they do on each side of the frænum near the central line, have been mistaken for the commencement of a follicular ulcer; but this condition, I take it, results also from mechanical irritation. That the symptom is an important diagnostic one I think all are agreed, and its simple explanation does not detract one whit from its value.

THE TREATMENT OF ANKYLOSIS OF THE KNEE.

By SAMPSON GAMGEE, F.R.S.E.,

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In consultation with Mr. E. P. Turner, I was requested on the 4th inst. to visit a delicate youth, aged 15, whose left knee had been immovable for many months. The leg was at a right angle with the thigh, and the head of the tibia slightly displaced backwards. The joint could not be moved in any direction. Two days afterwards, while the patient was under ether, I attempted forcible extension, with the only effect, at first, of making very tight all the tendinous structures about the joint. With a tenotome I successively divided all the hamstrings, including the ilio-femoral ligament, and, with the assistance of Mr. Turner and my dresser Mr. E. Johnston, at once straightened the limb. To judge from the force employed, and from the successive loud cracks, the adhesions must have been in great part bony. The joint was wrapped in cotton-wool, and a plaster of Paris case applied. I did not interfere until the tenth day, when we found the wounds all healed, and the straightened knee cool and painless.

This plan of treatment, with the occasional addition of section of the rectus femoris, is one which I have repeatedly adopted in similar cases, since I first saw it practised at Naples in 1852 by my distinguished friend Senator Professor Palasciano.* As a general proposi-

* *Memorie ed Osservazioni di Chirurgia pratica sulle Anchilosi* del Dr. F. Palasciano. Un volume con dieci figure incise in rame. Napoli, Stabilimento Tipografico di G. Gléja. See also *Rapporto sul Metodo di Cura delle Anchilosi del Ginocchio del Dottor Palasciano fatto da una Commissione dell' Accademia Medico-Chirurgica di Napoli. Rendiconto dell' Accademia*, tom. v. Febbrajo, 1851.

tion, it may be safely laid down—that forcible extension of ankylosed joints, immediately after subcutaneous division of contracted muscles and tendons, is a method of treatment which admits of much wider application than it has yet received.

THE OMISSION OF SODA-SALTS AND ALCOHOL IN THE TREATMENT OF GOUT AND RHEUMATIC GOUT.

By JOSEPH DREW, M.B.Lond., Beckenham.

THE following observations in the treatment of gout and rheumatic gout are given by one who has suffered much during the past twenty years from these diseases; and since, by the measures adopted, he has been free from any attack for more than a year, not to mention the great improvement in general health both of mind and body, he hopes some of the readers of the BRITISH MEDICAL JOURNAL may be induced to test on their patients, or on themselves if necessary, the decided efficacy of the treatment recommended.

The writer, born of parents free from gout, was seized with his first attack in the right ankle-joint at the age of thirty, and then suffered recurrences, at unequal intervals, in the right or left great toe and foot. As time passed on, the disease returned more frequently, until in some seasons it appeared as though the *materies morbi* was formed as fast as it was eliminated; and it became evident that a constitution otherwise healthy, although perhaps never one of the strongest, was fast losing its powers of life.

It will not be necessary to give the preceding and accompanying symptoms of each paroxysm, as they have been so truly and eloquently described by Watson and other classical medical writers; but one sign is unique according to the reporter's experience, and probably deserves a note in the history of this troublesome complaint. As soon as an attack became imminent, sudden congestion of the glottis and larynx occurred, with necessarily difficult breathing. If sleep supervened only for a few minutes, inspiration became so noisy (chiefly whistling) that it awoke the patient and alarmed the attendants. This disagreeable symptom continued until local inflammation was established in either foot, and the mucous membrane, relieved by derivation, was allowed to resume its proper function.

As in most cases of gout, rheumatism soon came to assist in the crippling process; the hands became so stiff and the joints so prominent, that the fist could with difficulty be closed, or a firm grip given. There was not only interstitial extravasation of urate of soda, but also considerable thickening of the phalangeal bones from repeated periarthritis.

Neither will it be necessary to report all the remedies taken during this long period, for a man who can truly say, "*in hæc re, plus scio quam vellem*," would be sure to try every agent that had ever been recommended or suggested.

And now the interest of the case begins, for the resolution was taken to give up completely the use of every alcoholic beverage. In former years, malt liquor had been relinquished, and with good results for a time; then wines too were added to the list; and last of all, in August 1877, spirits were suddenly and entirely banished. After a week or two of purgatory, the good work began, and has continued without intermission up to the present moment; so that the patient not only has been free from any attack of gout, but has felt and still feels better in himself than he has been for the long period of twenty years or more.

After waiting patiently for all that recuperation which the *vis insita natura* was able to accomplish, there still remained the stiffness of the hands and the periosteal thickening of the phalanges, which nature, unassisted, could not entirely overcome. Suddenly, about five weeks ago, whilst eating a morsel bountifully seasoned with salt, the thought occurred, "Can chloride of sodium be right for a gouty system, when cakes or biscuits or tea made with soda, or even soda-water (when containing that alkali), will produce an attack of this disease?" Certainly not, theoretically; for an atom of oxygen united with the sodium will present to the uric acid of the blood the worst poison it could possibly encounter.

The idea once started, it was, of course, immediately carried into practice, and chloride of sodium was placed in the *Index Expurgatorius*. Salt was omitted as an article of diet, not merely as a condiment, but avoided in salted meat or any other suspected comestible. The result in four or five weeks has been astonishing: most of the stiffness has passed away; rings that had been laid aside can be worn; and the phalangeal bones have almost returned to their primitive size and shape.