THE MEDICAL SICKNESS AND ACCIDENT SOCIETY.

THE usual monthly meeting of the Executive Committee of the Medical Sickness and Accident Society was held at 429, Strand, London, W.C., on January 28th.

There were present the Chairman, Dr. de Havilland Hall, Dr. J. B. Ball, Dr. J. W. Hunt, Mr. F. Swinford Edwards, Dr. M. Greenwood, Dr. F. J. Allan, Dr. A. S. Gubb, Dr. W. Knowsley Sibley, Dr. Walter Smith, and Mr. R. S. Charsley.

The accounts presented showed that, as usual at this period of the year, a large amount was being disbursed as sickness pay. During the last few weeks the number of sickness claims has been unusually great, more than half of them arising from influenza, which, as on previous occasions, has incapacitated a large number of medical men. So far the claims arising from influenza, although numerous, have been of much shorter average duration than during previous epidemics, and the experience of the Medical Sickness and Accident Society seems to show that the worst cases produced by this disease arise when it is no longer epidemic, but are attributable to various forms of its sequelæ. Some very serious cases of this kind are now on the Society's claim list.

This being the first meeting of the year, the Committee carefully examined all the cases of chronic incapacity now on the list. It was found that no fewer than twelve members are incapacitated from causes which leave little hope that they will ever be able to resume professional work, and their claim on the funds of the Society is practically that of annuitants.

The Committee have to deplore the loss they have sustained by the death of Mr. Ernest Hart, the founder of the Society. The following resolution was passed, and a copy ordered to be sent to Mrs. Hart:

The Committee of the Medical, Sickness, Annuity, and Life Assurance Friendly Society beg to express their sympathy with Mrs. Ernest Hart in the loss she has sustained; and they desire to place on record their appreciation of the services rendered by Mr. Ernest Hart as Chairman of the Executive Committee for ten years, and afterwards as President of the Society.

Prospectuses and all particulars on application to Mr. F. Addiscott, Secretary, Medical Sickness and Accident Society, 33, Chancery Lane, London, W.C.

NOTES ON HEALTH RESORTS AND SANATORIA.

SALSOMAGGIORE: ITS WATERS AND BATHS.

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and

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SALSOMAGGIORE has, as yet, been but little frequented by English health seekers, and its iodobromine waters seem to be scarcely known in this country.

Salsomaggiore is situated in the province of Parma, about 28 miles from Piacenza, and 20 miles from the town of Parma. It is 520 feet above the sea level, and is practically at the foot of the Apennines. The population of the whole district is about 5,000. To the seekers for health it presents various attractions, and mountains easy of ascent can be readily reached by train. Surrounding Salsomaggiore are little hills dotted with vineyards, gardens, and chalets, whilst not far distant lies the picturesquely-situated Tabiano, with its old feudal castle standing conspicuously on the crest of a hill. The country surrounding Salso consists of undulating and verdant slopes, the lofty Apennines closing in the background, and completing a most attractive panorama. Salso abounds in pleasant walks, and the roads, some of which are shaded by trees, afford suitable opportunities to the cyclist for interesting excursions to—amongst other places—the Castle of Pallavici, the ruins of the Castle of Scipione, and Vigolino with its natural grotto. The Emilia Road, which

goes from Milan to Rome, also runs quite close to Salsomaggiore.

One of the roads leading to Tabiano is named after the philosopher Gian Dominico Romagnosi, who was born there, and to whose memory the inhabitants have erected a statue, carved by Margaroli. The ease with which Salso can be reached by rail is important. It is connected with the chief towns of Northern Italy by a light railway, which puts it in communication with the main line passing through Borgo St. Donnino, thereby placing it within about thirty-four hours journey from London, *via* the St. Gothard and Milan route.

The neighbouring health resort, Tabiano—noted for its sulphur baths—lies but three miles distant, and is a pleasant drive or walk. The air of Salsomaggiore possesses that clear bright property so characteristic of Northern Italy, and, during the bathing season—May to November—rain rarely falls, and the sky is cloudless. The prevailing winds are from the north-west, but a complete series of meteorological observations are not as yet obtainable. A good supply of drinking water is brought from the neighbouring hills—far removed from any possible source of contamination—by a special aqueduct, and this water is likewise used for diluting the concentrated natural water from the Salt Pits, known as the “mother water,” the reputation of which, like our own Woodhall Spa, is based on its richness in iodine and bromine. The hotel accommodation at Salsomaggiore has been much improved during the past few years, and the town now contains many well-appointed establishments, the proprietors of which are keen in providing for the comfort of their visitors. In addition to hotels there are many establishments adapted for those who do not care for hotel life, so that the cost of living at Salsomaggiore need not be great.

The chief attraction to the place from a medical standpoint is the reputation its iodobromine waters have so long enjoyed. The knowledge of these waters dates back in all probability before the Christian Era. The springs in the Middle Ages were under the jurisdiction of the Bishops of Piacenza, and from them passed into the hands of the Farnesi about the year 1557. It was not until 1839 that their therapeutical properties were generally recognised, and later, in 1852, the medicinal effects of the diluted “mother water” were tried in cases of scrofula and syphilis. Count Adhemar, who was at that time concessionary of the Salt Pits, erected a bathing establishment which, eight years later, was enlarged considerably, whilst in 1880 a new establishment was built adjoining the old one. This was opened in 1883, and since then it has been enlarged on two occasions—1889 and 1893. The visitors at present number about 6,000 a year. Rooms for inhalations, douches, massage, iodosalts mud baths, and atomised sprays for nasal and faucial treatment in chronic affections of the respiratory tract have also been provided, consequently Salsomaggiore now possesses a well-arranged and extensive establishment of baths so erected as to meet all the requirements of modern balneology. Great care is taken to disinfect all garments, towels, etc., used in the various baths, this being effected by the Geneste-Herschler steriliser. Every garment after being thoroughly washed and aired is placed in the steriliser, and, after disinfection, is delivered by the machine in another wing of the building. The old process of obtaining the water was by manual labour; but this soon proved inadequate, and in 1864 an artesian well was constructed (1,700 feet) which gave a daily yield of about 7,000 gallons. At the present time several such wells are in operation, the principal one having a depth of over 2,200 feet; the average total daily yield of saline water is now about 50,000 gallons. In some of the wells the water reaches the surface spontaneously, being emitted in spurts, accompanied by a considerable amount of petroleum oil and gas. The latter, consisting mainly of methane and other light paraffins, is carried off by separate pipes, and utilised for illuminating purposes in Salsomaggiore. The separation between the water and oil is effected by means of various tanks, the water being siphoned off at the bottom whilst the oil rises to the top. After separation of the petroleum the water is allowed to stand in open tanks exposed to the air, and in about twelve hours loses its bright and clear appearance, becomes brown and turbid as it deposits the iron it contains in the form of ferric oxide.

In order to satisfy ourselves as to the accuracy of the published analyses of the composition of the water at Salsomaggiore, a sample of the clear water was taken as it left the first tank. It gave the following results:

Analysis of Salsomaggiore Natural Water.

Specific gravity (at 15° C.) 1.021.

Reaction neutral.

Taste strongly saline.

Deposit distinct and ruddy brown in colour

A litre of the water at 15° C. contained the following constituents:

	Grammes.
Sodium chloride	141.598
Potassium "	0.620
Lithium "	0.041
Ammonium "	0.778
Calcium "	13.243
Magnesium "	5.971
Aluminium "	0.217
Magnesium bromide	0.212
Magnesium iodide	0.069
Calcium sulphate	0.426
Ferrous carbonate	0.133
Organic matter	traces
Total	163.308

Hence, Total chlorine=100.078 g. per litre

" bromine= 0.184 g. "

" iodine = 0.063 g. "

The water, on leaving the iron precipitation tanks, is either stored in reservoirs for use in the bathing establishments or is utilised for the preparation of the "mother water." For the latter purpose the whole of the iron is removed by precipitation with milk of lime added in calculated amount, and then the greater part of the sodium chloride is extracted by boiling down in open pans. This is continued until the density rises to 1.265, when the residual liquid is drawn off from the great bulk of salt crystals, and constitutes what may be called the "crude mother water." The salt is then taken possession of by the Government, whose monopoly it is.

On submitting a sample of the crude mother water to analysis, we found it to have the following composition:

Analysis of Crude Mother Water.

Specific gravity (at 15° C.) 1.265.

Reaction alkaline.

Taste strongly saline.

Deposit slight and of a whitish character.

A litre of the mother water at 15° C. contained the following constituents:

	Grammes.
Sodium chloride	84.224
Potassium "	7.100
Lithium "	0.240
Ammonium "	1.819
Calcium "	197.218
Magnesium "	66.124
Magnesium bromide	2.549
Magnesium iodide	0.806
Calcium sulphate	0.350
Calcium hydrate	2.275
Organic matter	traces.
Total	362.705

Hence, Total chlorine=231.556 g. per litre.

" bromine= 2.216 g. "

" iodine = 0.737 g. "

This "mother water," the strength of which varies with the degree of concentration to which it is carried, is suitable for use in baths, and for this purpose it can be diluted to any desired strength. If, however, it is intended for use internally, the calcium and magnesium salts are precipitated as carbonates by boiling with carbonate of sodium, and the supernatant liquid drawn off and then concentrated or diluted as required.

The preceding analyses clearly show how rich the Salsomaggiore waters are in both bromine and iodine, and the following table gives, for comparison purposes, the amounts of these elements present in other well-known waters of a similar character:

Results expressed in Grains per Ten Gallons.

Name.	Iodine.	Bromine.
Kreuznach	1½ grains	25 grains.
Leamington	1 " "	4 " "
Woodhall Spa	4 " "	33 " "
Aix-la-Chapelle	½ " "	2½ " "
Salsomaggiore	44 " "	129 " "

In writing about the effects of medicinal waters the debated point always is the question whether absorption takes place through the unbroken skin—what, in short, is the true pharmacological behaviour of the external application in the form of baths of medicinal waters. Writing on the application of Woodhall water, Dr. Robert Barnes¹ states that he has no doubt whatever as to the entry of active agents in aqueous solution through the skin. To insure this entry it is necessary, Dr. Barnes says, that

what one may call the tide of osmosis must be turned inwards by the fasting condition of the body, entailing diminution in the amount of circulating fluids. Hence to obtain the most efficient action by skin absorption the bath should be taken after a comparative rest, and not soon after meals.

According to Dr. Lauder Brunton,² the absorption of watery liquids, or of substances dissolved in water, occurs very slightly, if at all, from the unbroken skin. Again, the distinguished Strassburg pharmacologist, Professor Schmiedeberg, states that water can neither penetrate the epidermis nor directly alter it to any material degree. The superficial layers of the epidermis swell up only after protracted bathing. Of course the case is different when we are dealing with morbid portions of skin, or in cases of wounds where the epidermis has been removed. Here the therapeutical effect is similar to that produced on the stomach by the imbibition of large draughts of water. The application of water in the form of a medicinal bath is therefore "a purely physical agent, which exercises those balneologically important effects upon the temperature of the body and metabolism, as well as upon respiration and circulation."³ In the form of baths the saline ingredients of a water exercise a stimulant effect on the skin, this effect, owing to the resistance of the epidermis already mentioned, being a superficial one. The separate constituents of a medicinal saline bath are quite indifferent, and no other kind of action is therefore imaginable, because the salts are not in the slightest degree absorbed from the watery solution by the skin when perfectly sound. In the form of douches, irrigations, pulverisations—the application of saline waters to accessible mucous membranes—a more powerful stimulation is doubtless produced.

The class of cases likely to be beneficially influenced by the external application of the iodobromine waters of Salsomaggiore comprises tertiary syphilides, chronic rheumatic arthritis, urethral arthritis, scrofulous disease of bones and joints, chronic inflammatory pelvic deposits, catarrhal affections of accessible mucous membranes, uterine fibroids, and chronic neuralgic conditions. Internal administration of the water may supplement that of the baths.

Those who like simplicity of surroundings and quietness, who require the greatest change of all—the change of rest—such as overworked, mentally fatigued, and neurasthenic patients, will find in Salsomaggiore all the conditions they need.

THE SANITATION OF SLAUGHTERHOUSES.

GARBAGE CREMATORS AND KNACKERY APPLIANCES.

THE "Dixon Furnace" for burning garbage has now been in use at Dayton, Ohio, for about a year. The four-in-one furnace and buildings cost 33,000 dols., and the working requires about 4,500 dols. a year, the fuel costing 300 dols. a month. Natural gas is used for burning garbage, and coke for heating the ventilating stack. Night soil and the carcasses of diseased animals find their way to this destructor, though as 20 cents. is charged per barrel for burning the former, and the night soil men are only paid 35 cents. for its collection, they are not averse to finding less expensive tips. The conditions are doubtless different in America from those which obtain here. We should regard a destructor requiring fuel as scarcely up to date in England.

A deputation from the Corporation of Nottingham travelled lately to Essen, in Westphalia, not to visit the great Krupp foundry, with its 50,000 employees, but to examine into the working of the Otte desiccators at the public abattoirs. This apparatus (there are two in work at Essen) consists essentially of a jacketted cylinder, 10 feet long and 4½ feet in diameter,

¹ *The Climates and Baths of Great Britain*, p. 577.

² *Lectures on the Action of Medicines*, p. 19.

Op. cit., p. 120.