drained by the infected gland, preferably the right and left inguinal region. I have not seen good results by injecting it into remote areas.

5. In phagedenic ulceration complicating venereal sores this serum would appear not only to neutralise the toxins in the blood, but also to bring about a healthy condition of the ulcer.

A CASE OF SEPTICÆMIA TREATED WITH ANTISTREPTOCOCCUS SERUM: DEATH.

By E. A. LERMITTE, M.B., B.S., M.R.C.S., L.R.C.P.,
Stamford Hill.

THE following case, when first seen, merely presented the features of acute lymphangitis, such a case as often gets rapidly well under the treatment adopted, and gave no warning of the terrible course it was doomed to run.

The drainage of the patient's house was in a decidedly defective condition, and had been condemned by the district sanitary inspector; this fact may have some bearing on the subsequent development of the case.

On July 18th W. H. consulted me, giving the following history: He was inspecting some tea chests which had been damaged by fire and water at the docks on July 13th, when in passing down a dark passage he struck his leg against a projecting chest and fell heavily forward. From that time to July 18th, when I saw him, he had had pain in the leg and sundry constitutional symptoms—headaches, etc.—which he ascribed to his liver; beyond this he did not complain of anything. He had gone about his business as usual, although not feeling quite well.

I found in the lower third of the right leg, over the prominent ridge of the tibia, an extensive ecchymosis with inflamed lymphatics extending thence to the groin; there were no enlarged glands in the groin. In the middle third of the shin, immediately above the bruise, there was an old wound, the result of an injury inflicted some twenty years earlier, which had never healed. The whole of the anterior aspect of the limb was swollen, hot, red, and tender; at one spot near the old wound doubtful fluctuation existed, and at that site I made a deep incision, but evacuated no pus. The wound was dressed antiseptically, the inflamed lymphatics painted with glycerinum belladonnæ (1 in 2), and the entire limb bandaged.

On the morning of July 19th there was less swelling and redness of the leg. The temperature was 102° F.; pulse 80, regular, and of good volume. At 8 P.M. the temperature had risen to 105.4°, and the patient became delirious. He was ordered phenacetin gr. iv, caffeine citrate gr. j, in a powder every four hours; at midnight the temperature was 104°, and the patient was much quieter.

On July 20th he was delirious all day, talking incessantly, but had occasional lucid intervals. The temperature rose again in the morning to 105°; he was then ordered cachets containing quinine sulph. gr. iv every four hours; by 10 P.M. the temperature had fallen to 103.6°.

On July 21st the general condition of the patient remained unchanged; free incisions were made in several places in the leg; a quantity of serous fluid was discharged through these incisions, but no pus found. His mental condition improved slightly, and the temperature fell to 99.8° at 10 P.M. During the two succeeding days the leg was dressed with boracic fomentation every four hours. Several more incisions were made in the leg, wherever fresh patches of redness appeared. The quinine treatment was continued throughout, and fluid nourishment (about 80 ounces) and brandy 6 ounces administered in the twenty-four hours. The delirium continued unabated during these days. The temperature fluctuated between 102° and 97.4°.

On July 24th I obtained the consent, previously refused, of the patient's wife to treatment by injections of antistreptococcus serum. At 11.15 A.M. I injected 10 c.cm. of the serum with the strictest antiseptic precautions. The temperature at that time was 99.2°, and fell to 99° subsequently; pulse 100, respirations 20. No perceptible result followed this injection, and the same quantity of serum was again injected at 3.30 P.M., and again at 7.30. At 10 P.M. the temperature had risen to 101° F.; 10 c.cm. of serum were injected at 11.30 P.M., and during the night the temperature fell to 98.4° F.

On July 25th, at 11.30 A.M., I injected 10 c.cm. of serum, making the fifth dose, and exhausting all the serum I had been able to procure on the previous day (Sunday). The temperature rose again to 99.4° at 2 P.M., and the patient was steadily becoming weaker. The messenger sent for a further supply of serum returned with serum supplied in hermetically sealed tubes from the Institut Pasteur, which I found it impossible to open without destroying the serum. I then sent to Messrs. Allen and Hanbury, who at some inconvenience to themselves supplied me with 6 phials, but these arrived too late. During the afternoon the patient was seen by Mr. Charles Ryall, and it was then found that gangrene had set in in the right foot. At 9 P.M. the patient became collapsed, and although strychnine was injected and everything done to restore him, he sank and died at 9.40 P.M.

I do not think it possible to emphasise too strongly the proposition already often enunciated, that if the serum treatment of these and similar cases is to be of any avail, that treatment must be commenced as soon as a reasonable diagnosis can be made. Delay reads disaster. Furthermore, the initial dose should be a large one, probably 20 c.cm.

May I be allowed to add that it is a pity that the Institut Pasteur does not issue simple directions in English as to the mode of opening its hermetically sealed glass tubes containing the dried serum, and the dissolving of the same, in

place of the French literature in which the bottles are now wrapped? It is very annoying to find that you have to wade through a quantity of French literature of a technical character before discovering that the phial is to be "held in a flame" in order to open it, and when so "held in a flame" it is still more annoying to discover that you have ruined the serum by the application of heat sufficient to break the bottle.

NOTE ON THE TREATMENT OF ARTHRITIS BY MEANS OF HOT AIR BATHS.*

By T. SYDNEY SHORT, M.D.,

Visiting Physician to the Infirmary and Assistant Physician to the General Hospital, Birmingham.

ATTENTION has lately been drawn to the treatment of chronic joint affections by means of hot air locally applied. That there is nothing new in the application of dry heat to such cases the old-fashioned method of easing pain by means of bran or salt bags heated in the oven and placed next to the affected part abundantly testifies. It has been maintained, however, that special benefit accrues from the application of superheated dry air by means of an apparatus especially contrived and patented. Some twelve months ago a case came under my care which seemed particularly suitable for such treatment. I determined to try the effect of hot air given without special apparatus beyond what may be possessed by any hospital, or could be procured for use in any house. This case was shown to the Pathological and Clinical Section of this Branch at the end of last session. The result was so satisfactory that during the last six months I have been making some observations on this method of treatment, and this short note is the result of my experiences up to the present time.

If the drug treatment of chronic joint cases were satisfactory there would not be a call for further methods, but I think all will admit that it leaves much to be desired. Acute rheumatism usually, if not always, succumbs to sodium salicylate. It is not so with subacute attacks. In fact I have come to the conclusion that in some forms of subacute rheumatism salicylate, if it does not make the patient worse does very little good.

We generally look upon acute rheumatic fever as a serious condition, and regard subacute "rheumatics" as an altogether lighter ailment. I am not sure, however, that we are justified in taking this view, when it is considered that an acute ailment once weathered without sequelæ is not so serious a matter as a chronic one continually recurring. It is true that a subacute case of rheumatism may never be actually so ill as an acute one at its height; but, on the other hand, it may never get really cured. If by the time the patient has reached middle life the hands or the feet are in any way crippled it is difficult for him to support a family or even to gain a livelihood. It was with a view to improve the condition of this class of case that the hot air bath was tried.

DESCRIPTION OF THE APPARATUS AND METHOD.

The apparatus employed is that in common use in hospitals for the administration of hot-air baths in cases where profuse diaphoresis is indicated. It is used in the following manner: The patient lies in bed between blankets. The tent which covers him is made of two large cradles, covered first with blankets, then with macintosh sheets, and then again with blankets. The coverings must be arranged at the top of the tent in such a manner that a small opening or chimney can be made to let out the hot air when it has become saturated with moisture. I have not found it necessary to make any counteropening, as the entering air finds plenty of inlet between the blankets and the chimney or flue of the heating apparatus. If the packing be too tight, it is obvious a counteropening of some kind must be made. There should be plenty of spare blankets near the head, in order that it may be wrapped in folds round the patient's neck and thus made as airtight as possible. The cradles that I use at the infirmary are made of wire netting on a metal frame; they are cheap and cannot take fire. The flue attached to

* Abstract of a paper read before the Birmingham and Midland Counties Branch of the British Medical Association, October 13th, 1898.

the lamp passes through an opening in the blankets at the foot of the tent, and may be covered with asbestos or simply a wet cloth to protect the blanket. It is important that the lamp should be made without solder, because the excessive heat is apt to damage the connections round the wick apertures and to allow of the escape of some of the spirit, which will speedily ignite. A very convenient method is to replace the spirit lamp by a ring bunsen burner attached to a gas bracket by means of a long rubber tubing. This is safer than a lamp, and raises the temperature inside the tent more rapidly. I always use the bunsen burner at the infirmary; but in places where no gas is available a lamp of some kind must be used. Many of the spirit lamps ordinarily employed with this apparatus do not give out sufficient heat, and are therefore useless if a higher temperature than 120° F. is required.

The blanket which has covered the body is removed the last thing to allow of free evaporation from the surface of the skin. The patient, therefore, lies quite nude inside the tent. A small towel can be placed across the hips if desired. The patient is wiped down after the bath, and wrapped in dry blankets for the rest of the day.

The estimation of the temperature inside the bath is not an easy matter. The air in the upper strata near the top of the tent is always much hotter than that of the lower strata in which the patient lies. There may be a difference of 10° F., or even more. It is clear, then, that if a long thermometer be inserted through a hole in the top of the tent its glass is subjected to the heated air of the upper strata as it passes out, and the reading is much higher than the actual temperature near the bulb, and therefore near the patient. The disadvantage of letting down a small thermometer by means of a string, and hauling it up again like a bucket from a well, is that the opening must be made each time, and consequently the temperature may never rise as high as is desired. Perhaps the best way is to insert a long thermometer through a small hole in the blanket near the side of the tent, midway between the head and the foot, so that the bulb is near the patient's body without actually touching it, otherwise the bulb will get wet. The index of the thermometer, being outside the tent, can be watched without displacing the coverings.

As a rule there will be no necessity for making any opening till the patient breaks out in a good perspiration or complains of feeling too hot. If the temperature of the air be taken at this stage it will be found to be from 120° to 130° F. The opening should now be made at the top of the tent. The feeling of excessive heat passes off rapidly, as the hot air saturated with moisture passes away. This is the important point in the treatment, because unless the moisture is got rid of, few patients can be found to stand a temperature beyond 130° F. On the other hand, if this is done periodically, the air in the tent is kept sufficiently dry to allow of the temperature being raised to 200° F. or higher. During the first bath I usually keep the temperature at about 130° F. for twenty minutes, and then take the patient out, subjecting him to a greater heat on the subsequent occasions.

SYNOPSIS OF CASES.

I have full notes of 9 cases treated by this method during the last six months. A brief description of them will be more in keeping with this short paper than a detailed account. Of the 9 cases, 3 were chronic rheumatism, 2 chronic gout, 2 sub-acute rheumatism, 1 chronic arthritis of a doubtful nature, probably due to an old injury, and 1 arthritis associated with osteitis.

The last case was not relieved by the baths. I thought that if anything he was made worse, and after a week's treatment they were discontinued. One case was slightly relieved. He left the hospital suddenly after nine baths. It was a case of chronic rheumatism of the hands. When he came in he could not button his trousers on account of the pain and stiffness in his hands. On leaving he was sufficiently improved to accomplish this.

Two cases were distinctly relieved. One of these is still under treatment and will, I think, derive considerable benefit eventually. The remaining five were greatly relieved.

INDICATIONS.

There appear to be four classes of cases to which this method seems especially suitable:

1. Subacute attacks of rheumatic arthritis.
2. Subacute arthritis following an acute attack of either rheumatism or gout, or consequent on a pyæmic condition such as gonorrhœal arthritis.
3. Cases of chronic thickening remaining as a consequence of gout, rheumatism, or rheumatoid arthritis, associated with pain and stiffness on movement, with continual aching pains in the neighbourhood of the joints.
4. Cases of impaired mobility following injuries to joints or to muscles in their neighbourhood; and cases of joint trouble from trophic causes or disuse.

There is no claim to anything new in the above method or in the apparatus by which it is carried out. It simply has this advantage that, by removing the excessive moisture from time to time in the manner indicated, a high temperature can be borne in an ordinary blanket tent. It can, therefore be given in any hospital or private house, and is applicable to any class of patient, whether bedridden or not.

NOTE ON MULTIPLE FAMILY CANCER.

By W. ROGER WILLIAMS, F.R.C.S.,
Clifton.

SUCH instances of multiple family cancer as that recorded by Mr. Power in this JOURNAL of July 16th, are of great interest in view of their bearing on the *questio vevata* of the hereditability of cancer. I know of many family histories quite as remarkable as Mr. Power's. I will briefly mention a few:—

1. I have seen a woman, aged 53, with uterine cancer, whose maternal grandmother, mother (aged 45), mother's sister, and the patient's two sisters (aged 32 and 36) had all died of cancer of the uterus. She was one of a family of eleven; of her other brothers and sisters, 3 died in infancy, and five were still alive and well.

2. Atthill mentions the case of a woman, aged 28, with uterine cancer, whose mother and two sisters died of cancer of the same organ.

3. In a family known to Sibley, the mother and her 5 daughters all died of cancer of the left breast.

4. Of the celebrated Bonaparte family, Napoleon I, his father, his brother Lucien, and two of his sisters (Pauline and Caroline) all died of cancer of the stomach.

5. It is very rare to find, in the same family, such a large number of members affected as in the following case mentioned by Broca:—

Madame Z. died of cancer of the breast, aged 60. Of her 4 daughters, 2 died of cancer of the breast and 2 of cancer of the liver.

The first daughter's offspring comprised 3 females, who were still alive and well, aged 68, 72 and 78 years.

The second daughter had 2 sons and 5 daughters. The eldest son died aged 28, not cancerous, and the youngest daughter died aged 60, not cancerous; all the rest died cancerous—the son died of cancer of the stomach, 3 of the daughters of cancer of the breast, and the other daughter of cancer of the liver.

The third daughter had 5 daughters and 2 sons; all the daughters died of cancer, 3 of the breast, 1 of the uterus, and 1 of the liver. Of the sons, 1 died in early manhood without issue, not cancerous, and the other was alive and well, aged 72.

The fourth daughter had only 1 son, who was alive and well, aged 70.

6. Otto cites an instance of 4 brothers and sisters who all died of malignant disease of the eye.

7. Silcock has reported the occurrence of melanotic sarcoma of the left eyeball in three generations of the same family.

8. Six cases of cancer in the same family were known to Catani; the parts affected being the rectum in 2, the lungs in 2, and the bladder and rectum.

9. Of a family of 7, under Roper's observation, 6 died of cancer; in the females the breast being the part affected.

10. Strümpell reports the death in early infancy of 2 brothers, each with sarcoma of the left kidney.

11. Manichow reports that 23 families known to him in "la Soissonnais" had between them 69 cancerous members, and of these the stomach was the part affected in no fewer than 57.

12. Some remarkable examples of the hereditary transmission of melanosis in horses are cited by Virchow. One of these a young white stallion, with melanosis of the anus, transmitted this disease to all its white descendants, whereas those of a darker colour escaped. From horses thus bred the disease became widely diffused throughout the neighbouring country.