TABLE II.—One Hundred and Fifty Healthy Families not known to be Affected with Syphilis.

No. of Pregnancies for each Mother.	No. of Families.	Healthy Children.	Mis-carriages.	Still-births.	Infant Deaths.
17	1	9	3	—	5
16	1	11	3	—	2
15	2	19	1	3	7
14	1	12	2	—	—
13	3	28	4	—	7
12	3	25	4	3	4
11	6	55	2	2	7
10	6	40	6	3	8
9	7	51	4	1	7
8	9	55	8	—	9
7	6	31	5	—	6
6	17	83	6	1	12
5	15	62	5	2	6
4	17	57	4	—	7
3	25	68	3	1	3
2	20	35	1	1	3
1	11	10	—	—	1
Totals ...	150	654	61	17	94

* = 826 pregnancies.

diagram shows such a graphic representation. The difference between the results of the fertilization of these two sets of women is remarkable; 150 syphilitic mothers had no fewer than 1,001 pregnancies, but of these only 390 resulted in presumably healthy children. And it must be remembered that in these cases not every mother began her maternal career as an affected woman; many of the pedigrees show that she was healthy and bore a number of healthy children before the taint affected her; after

that, miscarriages, still-births, and diseased children were born. On the other hand, 150 healthy mothers had 826 pregnancies, and from these there resulted 654 healthy children.

The outcome of the pregnancies of the two classes may be compared further by setting them against each other on the basis of a thousand pregnancies, thus:

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TABLE III.—Rates per 1,000.

Parentage.	Healthy Children.	Mis-carriages.	Still-births.	Infant Deaths.	Diseased with Syphilis.
Syphilitic ...	390	92	80	229	210
Healthy ...	791.7	73.8	20.5	113.8	—

Remark may be made on the fact that the syphilitic mothers had about 17 per cent. more pregnancies than the healthy mothers. This may be accounted for in part by the frequency of miscarriages and still-births in the syphilitic. The short intervals between many of these would allow of several ineffective pregnancies within the same time as would be taken for one full pregnancy in a healthy mother. Further, the frequency of these ineffective pregnancies and the many infant deaths would keep the family of the syphilitics down, so that where there is a desire for children the pregnancies would be increased in number.

It is unnecessary to point the moral, the figures speak sufficiently of the influence of parental syphilis on the chances of healthy progeny.

REFERENCE.

¹ BRITISH MEDICAL JOURNAL, August 29th, 1914, p. 590.

A SPLINT FOR COMPOUND FRACTURE OF THE ANKLE.

BY MAJOR M. SINCLAIR, R.A.M.C.

THIS splint was first applied to a compound dislocation of the right astragalus, but could be used for any compound injury in that region. Astragalectomy had been performed by Captain St. John D. Buxton, R.A.M.C., who asked me to suggest a method of fixation which would allow easy access to the wound.

There were minor injuries to the skin posteriorly, and great oedema due to septic infection of the foot and ankle as far as the knee. The ankle required frequent dressings, and the foot could neither be kept in good position nor quiet, and caused great pain to the patient.

A splint was constructed to fix the foot at a right angle, to immobilize the ankle, and allow ready access for dressings.

The patient was in hospital for three weeks, and was sent home in the splint, which proved so satisfactory for treatment and transport as to make its construction and method of application worth recording.

The splint was made out of the aluminium splinting from the field service fracture box in the following way:

FIG. 1.—A F = 15 in.; F H = 11 in.; H I = 11 in.; I J = 3 in. Total length = 40 in.

A length of aluminium of 40 in. is bent on its edge at F to an angle of 40 degrees, at H to an angle of 130 degrees, and bent on the flat at I to an angle of 45 degrees.

Another length of 40 in. is bent in the same way, having the staples corresponding and on the outside.

These two pieces are riveted at C and F, parallel and 6 in. apart, with 8 in. by $\frac{1}{2}$ in. by $\frac{1}{4}$ in. aluminium.

The transverse bar at *r* has a staple, *k*, in the centre, from which the foot is slung. Transverse bars of ribbon aluminium are fixed at *b* and *e*, and to these a sheet of perforated zinc 5 in. by 10 in. is laced with wire to form a smooth support for the sole of the foot. From *d* a strip of ribbon aluminium runs at right angles to *FA* as far as the point *g*. Another strip of aluminium ribbon runs from *g* to the corresponding point on the other half of the splint, and the junctions at *g* are fixed by riveting.

These supports give the necessary rigidity, prevent the angle at *r* enlarging owing to the weight of the limb, and the respective supports *d* *g* fix the ends of the bandage which keeps the dressings in position. *L* is an arc of aluminium 4 in. in length with a central staple to which a cord is attached. It is placed in the toe of a sock in which is a small hole for the cord.

The arc *L* acts as a spreader to prevent crowding together of the toes when the foot is suspended.

FIG. 2.

FIG. 3.

Four loops of cord are fixed at *r* and *i* to sling the limb to a modified Balkan by means of weights, cords, and pulleys. A suitable cotton sock is cut obliquely from the heel to the middle of the instep. The arc of aluminium, *L*, is inserted into the toes of the sock and the cord allowed to pass out through a small hole at the extremity. The foot is cleaned with petrol or ether to remove the grease. The sock is applied dry and its outside painted with a solution of equal parts of Canada balsam in xylol, Venice turpentine, and ether. When dry a layer of cotton-wool is placed between the perforated zinc and the foot, and the two fixed together with a band of adhesive plaster round the dorsum. The cord from the arc *L* is adjusted until the bars *H* *I* are parallel with the bones of the leg. The latter is embedded in a plaster case extending down as far as convenient (about 6 or 7 in.) from the tuberosity of the tibia. The uncovered portion of the leg is supported

with suspensions of elastic webbing or bandage. The foot is now fixed at right angles to the leg.

Figs. 2 and 3 show the splint applied to a patient and slung by four cords, snap hooks, sandbags, and eight pulleys to a modified horizontal bar. This gives the patient free movement in bed and the attendants ready access to the wounds.

BRONCHOPNEUMONIA WITH SECONDARY HAEMORRHAGIC MENINGITIS AND RECOVERY.

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IN the course of a series of some 14 cases of bronchopneumonia in children, occurring nearly a year ago, the following somewhat remarkable case was encountered—to wit, a mixed meningeal infection with spontaneous recovery. The mixed infection was, so far as was ascertainable, due to Fraenkel's pneumococcus, together with Friedländer's diplobacillus, the latter in great numerical predominance.

The original investigation was undertaken with a view to confirm or dispel Hutchison's suggestion that a streptococcal strain in bronchopneumonic infection is of grave prognostic import, quite apart from other considerations.

The sputum was obtained by first slightly irritating the pharyngeal wall and so causing a short onset of coughing and production of sputum, a sample of which was obtained on a sterile platinum wire and straightway inoculated on blood-agar, all contact with mouth or fauces being most carefully avoided. Thus the proverbial difficulty of obtaining infantile sputum was overcome.

The particular case in question was one of a series of cases of infantile bronchopneumonia admitted last January to a London infirmary. All but two were under the age of 3 years. A very large proportion of these cases showed the predominance of the pneumobacillus (Friedländer's) both in smears and in cultures from the sputum.

It is relevant in this connexion to recall the chief morphological and cultural characteristics of these two pneumonic organisms, not for didactic purposes, but as a labour-saving device.

The *Pneumococcus lanceolatus* is Gram-positive, and stains deeply in sputum, often (in these cases) showing chains of two, three, or four pairs, and is encapsulated. As a rule there were series of long chains which showed all transitions from a typical streptococcal arrangement to a gradual separation into diplococci, the morphological explanation of which should prove interesting. On blood-agar the colonies were almost transparent, and very small when found separate, and this was only at the edges.

The pneumobacillus, on the other hand, is Gram-negative. It is also encapsulated, and both forms reveal encapsulation remarkably well in sputum. The colonies resemble knobs of ivory, and a stab culture shows a characteristic "nail-like" form with a process in the substance of the agar; the "head" is a heaped-up mass, densely white. The organism is non-motile. This latter fact, together with morphological considerations, and its presence in sputum, also the absence of intestinal symptoms, enabled one to make sure that one was not dealing with *B. enteritidis* of Gaertner, which has one or two similar characters. It is, for instance, Gram-negative, and produces haemorrhagic lesions, including a single recorded case of "meningitis haemorrhagica," a clinical entity for whose existence this organism is held to be solely responsible, when considering the group it represents.

The sputum contained other organisms besides these two, such as staphylococci and diphtheroid rods, but these were not of significance in regard to the meningeal symptoms.

CASE.

A boy, aged 18 months, was admitted on December 29th, 1914, with marked meningeal and chest signs and symptoms.

History and Condition on Admission.

Save for the fact that he had not been ill before two days earlier, and that he had been fed on cow's milk, no history was

* Muir and Ritchie; *Manual of Bacteriology*, 1913, p. 383.