deserving of more attention than it usually receives. As a rule, under the circumstances, the small stone will not be discovered in its passage through the anus, unless specially sought for; but where large gall stones are parted with after producing intestinal obstruction, their passage *per anum* is usually characterised by such pain as to lead to their discovery.

In connection with treatment it may be well to mention the views of the two schools, the one advocating early operation by laparotomy, as in intestinal obstruction due to other causes, the other advocating treatment by opium, starvation, injections, and massage under an anæsthetic.

In one case, in a lady aged 65, I felt so sure of the obstruction being due to gall stones, that I ventured to treat the case on expectant principles, using opium as required. At the end of a fortnight sudden and complete relief ensued, and a large gall stone was evacuated. But in this case the history of pain over the gall bladder for a considerable time, succeeded by symptoms of peritonitis in the right hypochondrium, and then followed by intestinal obstruction, left very little doubt as to the cause of the obstruction.

This case is however exceptional, therefore, in face of the improbability of an exact diagnosis being made, any case of acute obstruction may be one in which speedy death is the only alternative to immediate relief, as in strangulation by a band or by an internal hernia. If laparotomy be performed and the cause be discovered to be an impacted gall stone, the obstruction may be removed either by needling the calculus through the walls of the bowel or otherwise crushing it, or by pushing it onward. This failing, the stone may be removed by enterotomy, the intestine being subsequently sutured.

If it were possible to be certain that a gall stone was the cause of the block, the expectant form of treatment would be fully justified, since the probability, arguing from published cases, is that the gallstone would eventually pass; but accepting the diagnostic difficulties we cannot help feeling that if relief by medical means does not speedily come, the surgeon is accepting a great responsibility in waiting for Nature's cure.

PRELIMINARY NOTE ON SOME MICRO-ORGANISMS OF NORMAL SKIN.

By G. W. DAMMAN, M.B., CH.B.MELB.
[From King's College Laboratory, London.]

It is a well-known fact that on the surface of the human body dwell numerous micro-organisms, even under normal conditions of the skin, but, in spite of the importance of the subject, it has been little worked at. Bizzozero, in 1884, was the first to go into the subject, and was followed by Bordoni-Uffreduzzi, Mittmann, Maggiora, Preindlsberger, and others. But these observers have worked in a rather desultory manner, and have, as a rule, confined their attention to the microphytes on some particular part of the skin. It is my intention to make a more exhaustive investigation, and in the meantime I propose to describe shortly a few of the organisms I have already isolated, and of which I can find no description in any of the papers and books I have consulted, and to which I have ventured to give provisional names. The portions of the body selected are the skin between the toes, the cruro-scrotal region, the contents of sebaceous glands in the face, the inner surface of the prepuce, the forearm, hairs and scales of the scalp, tip of the finger, and the space beneath the finger nail. In every case the skin was first washed in the ordinary manner to remove to a certain extent organisms which had settled from the atmosphere; then the epidermis was moistened with sterilised water and scraped with a sterilised knife; gelatine and agar-agar plate cultivations were then made of the scrapings.

I.—*Bacillus Epidermidis Capsulatus*.

This organism was obtained from scrapings of the skin between the toes.

Morphology.—A large motile bacillus with rounded ends, occurring mostly in twos, some forming long rods. In old cultures there is a tendency to involution forms shown by enormously long rods with irregularly distributed proto-

plasm. In gelatine cultures the organism displays a distinct capsule, absent in cultures on other media.

Biology.—Gelatine plate cultivations show irregularly-shaped colonies, often kidney-shaped, which have a blue colour, especially at the hilus and periphery, as seen with the microscope; later, the colonies assume a pale bluish colour macroscopically. In stroke cultivations it forms an abundant, thick, slimy, greyish layer with irregular edges; in stab cultures a whitish growth, both on the surface and in the depth, forming abundant gas; the surface growth forms a fine interlacing network of rays and concentric circles. On agar it grows fairly well, but is little characteristic; thrives best at a temperature of about 20° C. On potato it forms a thick dirty whitish growth in the needle track, with occasional formation of a few small gas bubbles.

Remarks.—A peculiar odour is evolved from all cultures, but more particularly from gelatine. The odour does not resemble that from sweating feet, which has been remarked by several observers in organisms obtained from between the toes (Thin, Uffreduzzi, Maggiora, etc.). Gas is formed abundantly in the deep layers of gelatine in stab cultures.

II.—*Bacillus Gelatinosus*,

obtained from the skin between the toes.

Morphology.—Fine, slender, actively motile threads, arranged irregularly, but with a tendency to a stellate or parallel arrangement. Preparations from all cultures show a distinct capsule, which is faintly stained by the aniline dyes. The bacilli frequently show a beautifully even beading similar to that seen in tubercle and leprosy; in old cultures there are long leptothrix forms, beaded and with irregular joints, and occasionally showing apparent branching.

Biology.—Gelatine cultivations produced a peculiar colourless, transparent, gelatinous material, which surrounds and is incorporated with the purely chromogenic organism, giving it a coarsely granular or mottled appearance. Plate cultivations: the deep colonies are very small, round or oval, and transparent, and grow very slowly. When they reach the surface they are irregular in shape; with the microscope they are rusty brown in colour, homogeneous, and opaque, with well-defined edges. Stab cultures show a yellow hemispherical growth on the surface, with the peculiar gelatinous appearance, growing very slowly; very little to be seen in the puncture. On agar-agar it grows very sparingly or not at all at a temperature above 28° C. Its growth is similar in every way to the gelatine cultures. Potato cultures are of a beautiful orange-yellow colour, and consist of thickly-set grains, very firm and difficult to break up. Later, the growth resembles a series of very fine, delicate, twisted, and coiled-up threads. On this medium the gelatinous appearance is not produced.

III.—*Bacillus Fluorescens Epidermidis*,

obtained from the tip of the finger after thorough washing and soaking in alcohol absolutum.

Morphology.—Actively motile, straight or curved rods, arranged irregularly; sometimes singly, but mostly end to end in pairs. No spore formation observed.

Biology.—Gelatine cultivations commence to liquefy in about two days without visible growth, nothing being seen but a slightly greenish cloudiness in the channel of liquefaction; the solid gelatine becomes feebly fluorescent and is completely liquefied in seven to ten days; a white flocculent deposit occurs at the bottom. If undisturbed, the liquefied gelatine separates into two layers, an upper green, and a lower colourless one, while a very thin greenish pellicle forms on the surface. Sooner or later the fluid assumes a yellowish tint. Stab cultivations are rather slower in development than the stroke; liquefaction takes place from the surface in the form of saucer-shaped liquefaction, rapidly extending to the sides of the tube, and then spreading downwards. On agar-agar the organism will not grow at blood heat, but at 25° C. forms an abundant whitish fluorescent growth, staining the medium a beautiful pea-green. Potato cultivations are of a dirty cream colour, limited to the needle track, and coarsely granular in appearance, with a dull surface.

Remarks.—This organism resembles in some respects bacillus pyocyaneus *s* (Ernst), bacillus fluorescens liquefaciens (Flügge), and bacillus fluorescens liquefaciens minutissimus (Unna). The question of its complete identity with one of

these must be postponed till further observations have been made, but I am inclined to consider it a distinct species. Dr. St. Clair Symmers¹ has also described a liquefying fluorescent bacillus, but, as he gives no details of its biological characters, it is impossible to say whether it is identical with my organism or not.

IV.—*Bacillus Luteus Liquefaciens*, obtained from the inner surface of the prepuce.
Morphology.—Short thick rods with rounded ends, usually constricted in the middle, occasionally forming short chains or longer unjointed rods.

Biology.—Gelatine cultures: on plates in two days the colonies appear as fine, round, slightly-yellowish points. In four days the superficial colonies are pale yellow, hemispherical, smooth, shining and opaque, about 1 millimetre in diameter. The organism commences to liquefy the gelatine in seven or eight days, the colonies becoming surrounded by a sharply-defined area of clear liquefied gelatine. The deep colonies are of irregular shape, brownish-yellow, and granular. Stroke cultures are yellowish-white, with finely-toothed edges, gradually become bright yellow, and liquefy in eight to ten days. In stab cultures there is a flat growth on the surface with a fine concentric arrangement, whitish veil in the depth. On agar-agar it grows well at ordinary temperatures, but not at a higher temperature than 28° C.; it forms a slimy yellowish-white growth. On potato, thrives with difficulty.

Remarks.—No free spores have been observed, but some preparations show signs of doubtful sporulation. The organism does not grow at blood heat.

V.—*Staphylococcus Flavescens*, obtained from the toes, cruro-scrotal region, and prepuce. It may possibly be the *micrococcus flavescens* incompletely described by Cornil and Babes in their textbook.²

Morphology.—Round or oval micrococci of varying size arranged irregularly in groups.

Biology.—Gelatine cultivations vary very much in colour and rapidity of growth, sometimes forming a wrinkled layer, sinking in the liquefied gelatine, sometimes forming isolated pasty-looking masses; in the latter case liquefaction appears to be more extensive and rapid; these variations are probably due to slight variations in the nutrient media. Liquefaction begins in three to six days, and there is always a flaky deposit at the bottom. In puncture cultivations, growth is slower; it begins at the surface as a pale yellow growth, and slowly extends into the depths, where isolated yellowish colonies may be seen. In plate cultivations the colonies begin to appear in three or four days; they are round, yellow, and granular, and have sharply defined edges which may be irregular. Liquefaction begins about the fifth or sixth day. On agar it grows rapidly as a thin film of dirty yellowish-white colour with scalloped edges. On potato it forms a dry, lustreless, dirty grey streak, limited to the needle track. Sown in broth, the fluid becomes turbid after two hours in the incubator, and after a few days forms a thin yellowish pellicle.

VI.—*Micrococcus Flavescens Subsidiens*.

Morphology.—Medium-sized round micrococci arranged irregularly in groups, occasionally in short chains of four to six elements.

Biology.—In gelatine cultivations the organism forms a pale creamy yellow growth, flat and shining, with smooth regular edges; in about ten days a gradual subsidence of the growth takes place without liquefaction; cultures are extremely viscid and tenacious. On plates there are yellowish or creamy, shining, round colonies, which with the microscope are seen to be finely granular and of a brownish yellow colour. The deep colonies are dark brown, the superficial more translucent, gradually becoming yellow. Stab cultures show a creamy yellow growth about ¼-inch in diameter, which gradually sinks in the gelatine without liquefaction, forming a cylindrical depression up to ½-inch or more in depth; at no time is fluid gelatine observed. On agar-agar it grows slowly in the form of a thin, dirty white film, with rounded edges.

In conclusion, I desire to express my thanks to Dr. Curnow, of King's College Hospital, for permission to obtain my material from his patients, and to Professor Crookshank for his kind help and suggestions during my experiments.

NOTES ON A CASE OF MILKY ASCITIC FLUID¹

By G. NIEUWONDT, M.B., C.M., M.R.C.S.,

AND

R. H. ROZENZWEIG, M.B., C.M.

On May 24th, 1889, I was called to see A. D., aged 15 months, a thin and weakly child, suffering from diarrhoea and vomiting. She had recovered from these symptoms on May 30th, but on the night of June 10th she became restless and seemed to be in pain. When seen on June 11th the abdomen was distended with tympanites and very tender, pulse rapid and wiry, and temperature above normal. Under treatment the abdomen had become all but normal on June 16th. The same symptoms then returned. By June 20th the symptoms were less acute, but she continued to perspire copiously, and I thought I could detect dullness low down in the abdomen. On June 28th the same symptoms reappeared. The distension of the abdomen on each occasion was greater than on the previous one.

Dr. Loubser was now called in consultation. We found the abdomen distended, and so tender as hardly to allow of even gentle percussion. The distension was chiefly due to tympanites, but there was some fluid below the umbilicus; The pulse small and rapid, temperature 102° F., perspiration copious, bowels loose (two to four times in twenty-four hours). We came to the conclusion that it was a case of chronic peritonitis with subacute exacerbations, possibly a case of tabes mesenterica. The symptoms slowly increased in spite of treatment with mercurial and other remedies.

The treatment mainly consisted of inunction of the abdomen with mercurial ointment and extract of belladonna equal parts, rags dipped in cod-liver oil being laid over the abdomen whenever there was too much irritation to continue the ointment, and malt and cod-liver oil internally.

About September 1st the tenderness of the abdomen was increased, the fluid had risen well above the umbilicus, and the abdomen was so distended as to bulge out below the costal cartilages in front and to be visible in the flanks from behind. The pulse was intermittent and the child cyanosed. I advised aspiration, and Dr. Rozenzweig was called in consultation on September 5th. We aspirated midway between the pubes and umbilicus, and drew off 20 ounces of white milky fluid. Being afraid of collapse, we stopped there, though there was still a large amount present. Some of this fluid was sent to Dr. Herman, President of the Cape of Good Hope Branch of the British Medical Association, and to Dr. Anderson and one or two other medical men in Cape Town.

The fluid had the appearance of rich creamy milk; specific gravity 1022. It did not coagulate spontaneously on standing; it contained a large amount of albumen and fat. Under the microscope it showed a granular basis with large nucleated cells here and there. The abdomen was still too distended to permit a satisfactory examination. No enlarged glands or any other abnormality were detected.

The fluid recommenced rising at once, and on September 9th I aspirated again and drew off 40 ounces, once more leaving some fluid behind, but on September 16th I completely emptied the abdomen of fluid, obtaining 80 ounces. As the abdominal walls were very flaccid and the tenderness not great, I examined the parts carefully, but could detect nothing abnormal. On September 24th the abdomen was more distended than it had ever been before, and I now obtained 90 ounces of fluid. All this time the child was thin and anxious-looking, fretful, and perspiring copiously; still, when not distressed with flatus, its appetite was fairly good, and the bowels loose, but never more than three or four times in twenty-four hours. On September 29th the abdomen was aspirated once more, yielding 55 ounces, but was not emptied owing to the cannula getting obstructed. On October 4th I drew off 90 ounces, on October 10th 50 ounces, on October 14th 70 ounces, and on October 20th again 70 ounces. On October 26th an attack of diarrhoea intervened, but at once yielded to calomel, chalk, and opium. On October 28th I aspirated again, getting 60 ounces, which was relatively less than on any previous occasion. On November 5th I got 55 ounces.

¹ BRITISH MEDICAL JOURNAL, December 12th, 1891.

² Cornil et Babes, *Les Bactéries*, Paris, 1891.

¹ Read before the Cape of Good Hope Branch of the British Medical Association.