

DETAILS OF EXAMINATION.

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(a) *Clinical Examination.*

THE whole body should be examined, in so far as is possible, in a good light and all the findings accurately recorded. While many auxiliary tests may be employed, the following methods are important:—

1.—*Sensation to light touch.*—The patient should be blindfolded. The normal skin should be repeatedly touched with some light object, such as a cotton swab, a feather, a camel's-hair brush, a spill of paper, and the patient asked to indicate accurately with the point of the finger the place touched. When the patient is responding to these stimuli the suspected skin areas should then be similarly tested, loss of sensation to light touch being indicated by repeated failure to respond. In this way anæsthetic areas may be gradually mapped out.

2.—*Sensation to pain.*—The eyes being blindfolded, a suspected skin area is alternately touched with the head of a pin and pricked with the point, a corresponding normal area being similarly examined immediately afterwards. The patient is questioned as to which prick produces more pain, the touch with the head or the prick with the point. This process should be repeated several times so as to avoid error.

3.—*Sensation to heat and cold.*—This may conveniently be tested under similar conditions by touching suspected areas with two test tubes alternately, the one containing hot (40° to 50° C) and the other cold water (20° C. or lower), the patient being asked to distinguish between them.

4.—*Thickening of the skin.*—The detection of slight degrees of skin thickening often requires considerable care. Inspection, with or without a magnifying glass, should be supplemented by palpation, the suspected area being rolled between the finger and thumb. Comparison should be made with the surrounding skin and with the corresponding area on the other side of the body.

5.—*Thickening and/or tenderness of the nerves.*—The superficial nerve trunks in normal individuals are frequently palpable and firm pressure may elicit slight pain. The determination of the thickening and abnormal tenderness should depend on careful comparison with the nerve, if

unaffected, on the other side of the body, or with the corresponding nerve in a healthy person of similar build. The superficial nerve trunks most commonly affected are the ulnar, the superficial peroneal, and the great auricular. Sensory branches supplying macules are sometimes tender and palpably thickened.

6.—*Mucous membranes*.—In examining the nasal mucosa it is advisable to use a speculum, and the field should be well illuminated.

(b) *Bacteriological Examination*.

Particular stress is to be laid on the need of examining smears from several sites and of making repeated examinations. Organisms may be demonstrable in one lesion or in only one part of it, while in another lesion they cannot be detected. In the early progressing cutaneous case the organisms in a lesion may be few and scattered, later becoming more numerous and generalised, while the converse may be true in the case as it improves.

Smears should contain as little diluting material (blood lymph) as possible, but the specimen should be so taken as to contain cellular material from the deeper layer in which the organisms are normally to be found.

1.—*Skin examination*.—There are two principal methods of procuring material for examination; namely, the “scraping” and the “snip.” By the former a very small cut, about 2 millimetres deep, is made with the scalpel well into the dermis, and material is scraped from the depth of this and smeared on a slide. By the latter method a small portion of the dermis, at least 2 millimetres thick is snipped off with a sharp pair of scissors, curved on the flat. The raw surface of the tissue so obtained is applied to a slide and firm pressure is exerted so as to express as much as possible of the cellular elements.

2.—*Nasal examinations*.—With the use of the nasal speculum the interior of both nares is carefully examined for infiltrations, nodules, and ulcers. If any of these is found, material should be removed therefrom with a blunt narrow-bladed scalpel, or a similar instrument, by scraping deep enough to cause a slight bleeding. Even when there is no visible lesion, a scraping should be taken from the septum, *M. lepræ* may be found on the septum, the inferior and middle turbinates, or the floor of the nose. The material so obtained should be smeared on a slide.

3.—*Staining*.—After drying, and fixing over a flame,

smears are stained for at least ten minutes at room temperature or heated three minutes till steam rises, in a solution of carbol fuchsin. This is prepared by mixing one part of a 10 per cent. solution of basic fuchsin in 90 per cent. alcohol with nine parts of a 5 per cent. solution of carbolic acid crystals in distilled water. This solution should be prepared at frequent intervals and be discarded when there is any trace of precipitate.

The slide is decolorised with sulphuric acid (10 per cent.) or nitric acid (10 to 20 per cent.) in water, and counter-stained with methylene blue.