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LECTURE ON DERMATOLOGY.

By Dr. E. DORE, F.R.C.P.

The room was filled to its capacity when Dr. Ernest Dore came to deliver his lecture on skin conditions, and the audience signified their appreciation of it by their enthusiastic applause at its close. Unfortunately we can merely give a summary here.

The subject of dermatology is far too extensive to be more than touched upon in so short a time as that available for a lecture, therefore Dr. Dore only briefly reminded his audience of the structure and functions of the skin and illustrated this with diagrams. From the surface inwards we find the following types of cells which go to the formation of the skin: (1) a horny layer of dry, flattened cells without nuclei; (2) a layer of similar cells, but nucleated; (3) the stratum lucidum, a very thin transparent layer; (4) a layer of granular cells; (5) the Malpighian or mucous layer composed of angular nucleated cells which contain the pigment granules which give colour to the skin; (6) a layer of columnar cells into which there penetrate the tiny loops of the blood vessels; (7) the chorionic layer; and (8) the subcutaneous fatty tissue. It must be remembered that the dermis proper only includes layers 7 and 8, anything above these being epidermis. The skin is perpetually growing outwards, cells from below being continually pushed upwards to the surface. Hairs do not grow only on the surface, they penetrate the epidermis and the roots lie in the fatty subcutaneous tissue. To the hair follicles there are attached sebaceous glands which are believed to be controlled by tiny muscles known as the *erectores pilorum*. The sebaceous glands supply sebum, which is the natural lubricant of the skin. The so-called skin "foods" can do no more than supplement the natural sebum. If the skin is very oily it is permissible to use an astringent lotion to prevent the greasy appearance. Apart from this none of the beauty treatments have much effect. Owing to the depth to which the hairs penetrate, it is difficult to treat diseases which attack the hair, such as ringworm and sycosis, or barber's itch. Ointments rubbed on the surface do not penetrate and it is generally necessary to use the electric needle or X-ray, which causes the whole of the hair to come out. The sweat ducts, like the hair follicles, pierce the epidermis and enter the sweat glands which lie in the subcutaneous tissue. The duct is straight where it leaves the sweat gland, but assumes a corkscrew appearance as it passes through the epidermis. There are about 2,500 sweat ducts to the square inch of the skin. The sweat glands are under the influence of the nervous system, but not the sebaceous glands. Blood vessels penetrate the dermis from below, but do not reach the epidermis. The nerve endings are also in the dermis.

The Functions of the Skin.

- (1) The skin protects the underlying structures. It is elastic and acts as a buffer.
- (2) Evaporation takes place from the skin and this is regulated by the nerve influence on the sweat glands. The

fact that there is the horny epidermis prevents too great loss of moisture. There is invisible, as well as visible, perspiration; in fact we lose about two pints of sweat a day. When the kidneys are diseased, it is possible to make the skin perform certain of their functions by inducing perspiration. As, however, sweat consists of 99 per cent. of water, it is not possible to eliminate much of the toxin from the blood stream.

(3) The heat regulation of the body is largely brought about by the control of the blood vessels in the skin by the peripheral nervous system. Perspiration cools the body.

(4) The skin has a sensory function; by means of the tactile and other nerves the sensations of heat, cold, touch and pain are conveyed to the brain.

(5) The skin has no great respiratory function in human beings, as it has in some animals, but there seems to be a small amount of exchange of oxygen and carbon dioxide through the skin.

(6) Absorption through the skin is not great, except for certain substances such as mercury.

The Causes of Skin Diseases.

Generally speaking the main causes of skin disease, come from without, and lack of cleanliness is one of them. It is a great mistake, however, to suppose that all skin diseases are due to this cause, or that the person suffering from one is always to blame. Some of the external causes of skin disease are:—

(1) *Excessive exposure to sunlight.* This causes the skin to become red and to blister, an effect which it shares with ultra-violet radiation if given in too large doses. Lupus erythematosus, although actually a tuberculous infection, is specially liable to occur when there is excessive exposure to sunlight. Cancer of the skin also occurs in the tropics and is supposed to be brought about by the strong sunlight.

(2) *Heat.* The habit of sitting close to a very hot fire can cause an erythema of the legs which in time gives place to brown pigmentation. The condition is known as erythema ab igne.

(3) *Cold* is a very prolific cause of skin diseases, which are often due to the contraction of the blood vessels to prevent loss of heat. Chilblains are a good example of this and are very common.

(4) *Occupational Causes.* These have assumed special importance since the question of industrial compensation has arisen. It is often very difficult to tell whether a dermatitis has been caused by some substance used by a worker in the course of his employment, such as certain chemicals, or whether it may not be due simply to too strong soap used in removing the substance. Some of the materials in common use which may cause skin diseases are: (a) strong antiseptics, (b) strong alkaline soaps, as used in laundries, (c) sugar and salt, which can harm the skin of grocers and others who handle them to any great extent, (d) flour, (e) certain plants such as the primula and American poison ivy, (f) tar, and (g) dyes which are used for the hair and for furs can cause much harm. Workers

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