the cheek; it seems the obliteration affected all the openings of the sebaceous glands within the abraded area. 3. The occlusion may be congenital.

Diagnosis.—It is impossible to confound this affection with any other, excepting perhaps xanthoma palpebrarum; however, sufficient differential characteristics will be furnished, on the one hand, by the more pronounced yellow color and the more plate-like appearance of xanthoma which presents a sharply demarcated roundish form, as well as by the absence of the pearly lustre; on the other hand, by the fact that xanthoma is generally confined to the eyelid; moreover, on grasping a fold of skin, milium feels like a foreign body, xanthoma does not, and when the epidermis is slit open, in milium the spherical body is easily expressed, but not in xanthoma.

The *treatment* of milium consists in its removal; usually it is sufficient to make a small incision, often bloodless, with a lancet into the tense epidermis, when a gentle lateral pressure will cause the globule to emerge. The minute wound at most requires to be covered with court-plaster. In order to prevent relapses, the skin should be soaped and rubbed at least once a day.

In acute multiple formation of milia which, however, I have never yet met with, Kaposi advises frictions of green soap.

3. *Atheroma.*

Steatoma, Sebaceous Cyst.

Slightly rounded or hemispherical tumors, ranging in size from a lentil to a hen's egg and in firmness from elastic softness to tense hardness, covered with normal, often glossy distended skin.

Atheroma, an accumulation of sebum either in the sebaceous gland proper or in the hair-follicle, has its seat partly in the cutis, partly in the subcutaneous cellular tissue.

It is met with most frequently on the hairy scalp, in the face, on nucha and back, and on the genitals. The efferent duct of the sebaceous gland is either occluded or remains normal; cases of stenosis of the duct likewise occur.

Closed atheromata are found on the scalp and in the face (most frequently on the eyelids); those with open follicular ducts on the nucha, back, and the labia majora, but neither of these forms is exclusively confined to these places. According as the efferent channel is open or closed, the tumor feels soft and doughy, or elastic and tense. The variation in size is extreme, according to the duration of the retention, which may comprise a few weeks to a number of years. The skin extended over an atheroma of the scalp is hairless. The hair-follicles seem to be atrophied from pressure. From the open atheromata of the back and nucha the pulpy contents are evacuated on pressure. Atheroma occurs almost always isolated, very rarely in groups. Buch mentions twenty-three cysts from a pin's head to a pea in size, on the glans penis, after an infection with a soft chancre. In rare cases the walls inflame, and spontaneous recovery by suppuration ensues, sometimes also absorption of the fluid constituents, with thickening and calcification. As a rule, atheroma is painless.

There is no doubt that these sebaceous cysts are produced in the same way as comedones and milia. This explains also the fact that the accumulations have their seat at times in the sebaceous gland, at times in the hair-follicle. One or other of these structures has in the course of time been changed by pressure into a sac of connective tissue of variable thickness, the inner surface of which is covered with a membrane consisting of accumulated epithelia and corresponding to the normal investiture of the dilated organs as well as to the lamellæ inclosing milia and comedones. This lamellar sac is the true

product of the inclosed thinner or thicker, granular pulp, usually turned rancid by the length of time. By far the greater part of this pulp consists of epithelia, the lesser part of fat, partly still inclosed in the epithelia, partly free. The presence of epidermis gives to these cyst-contents the characteristic pulpy form. The fat is either of an oily nature or cholesterin. When the latter predominates, the pulp acquires a glistening appearance. The admixture of lanugo is not lacking. In some cysts, probably transition forms into milia, the onion-like structure peculiar to the latter has been found.

The *diagnosis* is usually very easy. It can at most be confounded with lipoma; where any doubt remains, an exploratory puncture will decide.

The *treatment* is exclusively surgical, the complete extirpation of the entire sac being the best. Simple opening or partial extirpation is of no use, for even small remnants of the investing membrane give rise to new cysts. An easy method which generally suffices is the following:

Immediately at the margin of the tumor a straight incision, somewhat longer than the diameter of the tumor, is made. Thereby the border of the sac is exposed and it is easy to insinuate a dull spoon underneath the tumor and thus loosen and enucleate it.

Should extirpation be impossible, the sac must be opened and emptied, and its inner surface destroyed by some caustic; this is necessary, too, if small remnants have been left behind after attempted extirpation.

Acne simplex.

Acne, Acne vulgaris, Acne disseminata.

By acne in the more restricted sense, or acne simplex, we understand an inflammatory process, generally chronic, of the sebaceous glands with the formation of nodules and tubercles, in the centre of which is a black comedo plug or a pustule.

The single acne efflorescence arises usually without any demonstrable cause from a comedo which changes to a red nodule with a black centre (acne punctata). The latter in a few days develops into a pustule with a variably intense inflammatory areola (acne pustulosa) and after the comedo plug is discharged, it heals without leaving any cicatrix. But if the inflammation is not restricted to the follicle and its efferent duct, and the surrounding cutis tissue takes part, then the inflammation, in the majority of cases, passes into suppuration and smaller or larger abscesses form; they open and lead to suppuration and destruction of the sebaceous glands as well as of the connecting hair-follicle, and leave cicatrices. If the abscess is small, the cicatrix resembles a pockmark; larger abscesses leave larger cicatrices. Larger abscesses have a tendency to burrow, and the contractions and distortions lead partly to cicatricial cords, partly to narrow folds with the formation of pockets.

In these cutaneous remnants the sebaceous glands exhibit a strong tendency to form comedones and milia so that these pockets are often quite dotted over with black points. The pain manifested with this process corresponds to the degree and the extent of the inflammation. Another course of the inflammation, usually painless, is the chronic type leading to the formation of nodules (acne indurata) which, however, may subsequently suppurate.

The number of acne pustules and nodules simultaneously present is very variable, from a few to several hundred. However, as but few sebaceous glands inflame at the same time, all stages of development will be found side by side on the same person.

Acne is very frequently complicated with other affections of the sebaceous glands;

with seborrhœa of the head, face, and neck, with milium, and in the higher degrees of the disease, with atheromatous processes. The complexion of the face is frequently grayish dirty; comedones, pustules, crusts, and nodules are oddly intermingled on a bloated, grayish skin with fatty lustre. In very grave cases, though fortunately much more rarely in the face than on the back and nucha, there occur also atheromatous follicular tumors whose efferent ducts are nearly always preserved, and pressure on which evacuates first a gigantic comedo plug and then the above-mentioned rancid white pulp. The back of such patients has a rancid odor differing specifically from the usual exhalation.

In acne punctata the papillæ and the upper layer of the cutis are the seat of inflammatory changes. In the slighter cases of acne punctata, suppuration is found only in the efferent duct; in nodules and abscesses, the connective tissue surrounding the glands and hair-follicles is inflamed, with subsequent purulent degeneration. The more deeply the suppuration penetrates, the greater is the succeeding destruction of the sebaceous glands alone or the sebaceous and hair follicle. In acne abscesses, both must perish.

The *cause* of the inflammation is the mechanical irritation by the inspissated secretion; the latter again is due to deficient glandular activity, because, owing to the defective elaboration of sebum, the secretion has time to dry in the efferent duct. Behrend explains the continued new-formation of acne efflorescences by assuming that the swelling of the inflammatory areolæ around existing acne pustules and nodules occludes the efferent channels of additional, heretofore healthy glands. By this swelling he also explains the occasional occurrence of pus deep in the follicles, while the efferent ducts are apparently intact. Acne simplex occurs chiefly during and after puberty, from the fourteenth to the thirtieth year.

Kaposi states that the male, Wilson that the female sex is more predisposed to acne.

In our clinic, of eighty-three acne patients, fifty-one were males. On the other hand, the female sex predominates before, the male after the thirtieth year of life. Hebra found equal frequency in both sexes. Chronic digestive disturbances, anæmic and chlorotic conditions seem to predispose to acne. Auspitz repeatedly saw acne appear after variola. The fact that acne occurs at the time of puberty has caused excess and lack of sexual intercourse, onanism, and insomnia to be looked upon as etiological factors. Excessive habitual consumption of alcoholic beverages or of pungently seasoned dishes are not causes any more than the others. Still, acne seems to have some connection with the genital sphere, for often it appears only during pregnancy, or ceases during that period; on the other hand, eunuchs are very rarely subject to acne.

The following forms or varieties should be distinguished from this idiopathic type:

1. *Acne frontalis s. varioliformis* (Hebra), nodules and pustules appearing in groups at the edge of the scalp. The nodules are brownish-red and contain no comedo. The flat pustules often dry in the centre, and the minute crust then sinks below the level, thus producing an umbilicated, pock-like pustule which leaves a scar after the falling of the crust. The course of this form differs from that of ordinary acne by the simultaneous appearance of a larger number of efflorescences and an intermission of several months between these outbreaks.

2. *Acne cachecticorum* (Hebra) occurs over the whole body of debilitated persons; this form exhibits flat, dirty-red nodules changing into pustules which leave pigmented scars. I take it to be a grave form of acne due to anæmia.

Both forms, acne frontalis and acne cachecticorum, are very rare and bear the greatest resemblance to syphilis pustulosa, and nothing but the history and further course will clear up the diagnosis.

3. *Acne artificialis s. medicamentosa.* In this form, the sebaceous glands inflame in consequence of the external or the internal influence of drugs. Among these are:

Tar acne. Owing to the irritation of the glandular efferent duct by tar, whether by direct application to the skin or by continued inhalation of tar vapor, there are formed, particularly on the extensor side of the extremities (more frequently with hirsute individuals), hard red nodules, with or without pustulation, whose centres are occupied by a black point consisting of tar particles and epidermis, in the midst of which there is often a fine hair. More frequently than in ordinary acne, there are formed hard nodules having a brawny feel which are usually very painful and on delicate portions of the skin sometimes develop into furuncles. After the use of tar is discontinued, the acne slowly disappears, often after the lapse of a month; the levelling of the nodes is materially accelerated by pulling the hairs. Resineon, creasote, and petroleum, when applied to the skin for a lengthened period, may likewise produce acne. To the same category belongs also the acne observed in flax spinners.

Chrysarobin acne. This drug possesses the quality of irritating the sebaceous glands into the formation of acne; only in this instance nodules are developed even more frequently than in tar acne; the nodules have a black dot in the centre.

The internal use of drugs may produce: *iodine acne.* This appears first in the face (forehead), often within a few days and usually simultaneously with iodine catarrh. The nodules are small, and quickly change into pustules with a vivid red areola which, according to T. Fox, may develop into a ring-shaped vesicle. The exanthem appears simultaneously and has an acute course, leaving no scars. Acne is the slightest of the iodine exanthemata; in graver forms, the exanthem may be vesicular; in still more violent intoxication, it may be hemorrhagic (Thin). With the continued use of iodine, the drug was shown to be present both in the normal sebaceous secretion and in the pus of the acne pustules. Hence iodine acne is a consequence of the local irritation of the sebaceous glands by excreted salts of iodine.

Bromine acne. The continued use of bromine salts (bromide of potassium and sodium) causes a deep inflammation of the sebaceous glands—bromine acne. Though bearing the greatest resemblance to ordinary acne, it leads to much deeper infiltrations and abscesses. Bromine acne differs from acne simplex by attacking the hairy parts by preference; its occurrence on the scalp is especially characteristic; it increases or diminishes with augmented or lessened doses of bromine. In bromine as in iodine acne, the excretion of the drug by the sebaceous glands is the cause of their irritation and inflammation, and the bromine has been demonstrated in the pus of the bromine acne pustules by Guttmann, while my brother, Th. Veiel, has been unable to detect it in them.

All these drug exanthems disappear spontaneously when the remedy is discontinued. Bromine acne moderates considerably after only ten days; after three weeks it is gone. Iodine acne disappears even more rapidly.

Diagnosis.—Acne may be confounded with pustular syphilides and varioloid. From the former it may be differentiated by the history and the inoculability; from varioloid, by the fever associated with this eruption, by the course, and its occurrence on the whole body, the extremities included. In the forms of artificial acne, comedones develop but rarely, if at all.

Treatment.—Artificial acne is mastered by removing the cause, and the levelling of

the tubercles is hastened by withdrawing the centrally located hairs. Idiopathic acne, however, is a stubborn affection to be conquered only by great persistence. The internal treatment is to be directed only against anæmic and chlorotic conditions possibly present. Laxatives and so-called blood-purifiers, sarsaparilla, etc., are of no value, perhaps even aggravate the trouble.

The external treatment has for its object the removal of the acne nodules and pustules, and as far as possible the prevention of their new-formation. In order to attain the former end, the pustules should be opened so as to give free egress to the pus. For this purpose we employ a narrow lancet or the conical pyramidal awl devised by Auspitz, which is passed along the efferent duct as far as the pus cavity. Others endeavor to accomplish this object by painting the pustules with concentrated carbolic acid, followed by a coating with flexible collodion. Any comedones present are expressed, those inflamed into papules are caused to mature by covering them with emplastrum cinereum, with Unna's mercurial plaster muslin, or else by irritant frictions. For the latter, the most frequent applications are, Hebra's alkaline spirit of soap and liquor potassæ carbonat., or iodate of mercury ointments 1 : 10, iodide of mercury ointments 1 : 20, and unguentum Rochardi.

℞ Hydrarg. chlor. mit., ... 1.5 Gm.
Iodi puri, ... 0.5 "
Leni igne fusis adde
Ung. rosat., ... 70.0 "
M. f. ung. S. To be rubbed in three times daily.

Compresses wet with solution of corrosive sublimate 1 : 100 (extreme caution !) and painting with iodized glycerin, the parts being subsequently covered with rubber cloth, are also used for the same purpose. For acne of the trunk Hebra recommends Vlemingkx's solution. All these applications lead to the development and maturing of the acne efflorescences preformed in the skin. The first-named method, covering with emplastrum cinereum, though it requires a little more time, is painless, and hence to be preferred to the others. Not until further development of papules is no longer manifested should slightly irritant spirituous lotions be employed, so as to stimulate the glandular activity. Of such, the sulphur paste recommended by Hebra for sycosis occupies the first rank ; but in order to prevent the possible irritation of the eyes by sulphur particles dropping into them, mucilage should be added to it. I use the following formula :

℞ Lactis sulphuris,
Alcoholis,
Aquæ rosarum, ... āā 30 Gms.
Mucil. acaciæ, ... 10–20 "
To be applied every three hours.

If this sulphur paste cannot be continued day and night until recovery has ensued, *i. e.*, until fresh inflammations of the sebaceous glands no longer appear, the tension and burning of the reddened rough skin of the face by day must be moderated by greasing with some simple fat (vaseline), to be rendered less conspicaous by powdering subsequently. It is of advantage also to use for the same purpose a mixture of benzoin and water, with the addition of glycerin.

℞ Tinct. benzoin, ... 5 Gms.
Aq. rosarum, ... 90 "
Glycerini, ... 5 "
To be applied two or three times daily.

I order this lotion for months after the cure is completed, as a toilet water stimulating the activity of the skin.

Instead of the sulphur paste, many autnors recommend an aqueous, alcoholic solution of corrosive sublimate 1 : 400–500. Ellinger most warmly recommends rubbing with sand which, however, has been formerly used in a different form, as sand-soap and pumice-soap.

In the case of deep seated abcesses it is advisable to scrape the lesion with a curette.