As the resulting scar is, however, both deep and indelible, and ever afterward points unmistakably to the nature of the original disorder, efforts are constantly being made to rob these procedures of some of their surgical severity. With special care many surgeons in private practice now succeed in penetrating the abscess-cavity of the gland with a fine bistoury or a large aspirator needle. The evacuation of the contents by squeezing is followed by injection of a hot borated solution or, as White suggests, of iodoform ointment. Aspiration of the abscess with subsequent injection of hot borated water often suffices, without the production of a serious scar.

DISORDERS NOT INVARIABLY VENEREAL.

BALANITIS AND BALANO-POSTHITIS.

BALANITIS is an inflammation of the mucous membrane covering the glans penis. It is usually accompanied by more or less inflammation of the prepuce (posthitis).

Etiology.—Balanitis frequently complicates gonorrhœa and chancre, but it may occur independently of these affections, and may be non-venereal in origin. It is caused by mechanical or chemical irritation of the mucous membrane, and it most frequently results from retention beneath a long prepuce of gonorrhœal or other pus or of irritating vaginal or other secretions. Neglect to cleanse the parts, permitting the normal secretions to decompose and become irritating, may be a sufficient cause.

Symptoms.—In the beginning of the inflammation the surface of the glans is slightly reddened and is covered with a thin, creamy layer of mucus and pus. The redness rapidly becomes more intense, the discharge thicker and more profuse. As a result of maceration the epithelium is destroyed in patches, leaving irregularly outlined excoriations; these excoriations are usually superficial, but they may become quite deep and simulate the early stage of chancroid. The inner surface of the prepuce usually participates in the process, thus

producing a balano-posthitis. The entire body of the prepuce may be inflamed, with slight or extensive œdema and tumefaction. Inflammatory phimosis—or, more rarely, paraphimosis—may result. The inguinal glands may become somewhat enlarged and tender, but they rarely suppurate. The subjective sensations are usually those of slight itching and pricking, most marked in the sulcus back of the corona; but in severe cases the glans becomes very sensitive, so that walking and other movements of the body are painful unless the penis be carefully supported and protected. Scalding on urination is usual, especially if phimosis be present.

With a long, tight prepuce balanitis may become chronic; the surface is then red and velvety, showing granular or even warty elevations.

Diagnosis.—If the prepuce can be retracted, the diagnosis can usually be made without difficulty. The excoriations of herpes are preceded by distinct vesicles, and other portions of the glans are not inflamed. When balanitis follows herpes, the history of the disease furnishes the only means of determining its origin. Syphilitic chancre and chancroid are too distinct in their characteristics to be confounded unless they are complicated with balanitis. Careful examination will detect the induration of an initial sclerosis, even in the rare diffuse forms. The ulcers of chancroid are much deeper than the excoriations of balanitis, and the pus is autoinoculable. In severe cases of balanitis it is not wise to exclude the possibility of an underlying chancre or chancroid until a few days' treatment has reduced the redness, swelling, and infiltration of the parts. In gonorrhœa, when the prepuce is long, and especially if the preputial orifice be filled with cotton to catch the discharge, the pus works backward and covers the glans, producing an appearance that may be mistaken for balanitis. Cleansing and inspection of the parts will readily reveal the source of the discharge.

When balanitis is complicated by phimosis, an accurate diagnosis of the underlying conditions is more difficult (see *Phimosis*).

Treatment.—The treatment of balanitis without phimosis is simple. The indications are to keep the parts clean and free from pus, and the inflamed surfaces dry and separated from each other. The prepuce should be retracted and the parts be cleansed in simple warm water from two to four times a day. From 3 to 4 per cent. of boric acid or 1 per cent. of carbolic acid may be added to the water, but soap or other irritating substances should not be used. After washing, the parts should be dried gently by patting with antiseptic cotton or with a soft cloth, and covered with a fine dusting-powder. Over the powder is laid a thin film of the cotton or a piece of lint cut to a shape and size that will just cover the glans and leave the meatus free. The prepuce is now pulled forward to cover all, and the dressing is complete. For mild cases a powder containing 1 part of boric acid and from 2 to 4 parts of refined talc is sufficient. Of equal service are calomel, bismuth, or zinc oxide, each alone, or in combination with one of the others, or reduced with talc. In severe cases, when the surfaces are very sensitive, iodoform is excellent and gives relief. Before applying the powder the surface may be wiped gently with a solution of nitrate of silver (gr. xx to ʒj in ℥j), and deep excoriations may be touched lightly with the solid stick.

If the powders are not productive of comfort, the

cotton or lint may be moistened with a mildly astringent and soothing solution before it is applied over the powder, or the latter may be omitted altogether. Solutions of carbolic acid (1 per cent.), boric acid (2 to 5 per cent.), dilute lead-water, red wine (ʒj to ʒss in ℥j), or the following may be used:

℞. Zinci sulphat., gr. j–ij;
Morph. sulphat., gr. ss.;
Atropin. sulphat., gr. ¼;
Aquæ, ʒj.—M.
Sig. For external use.

As the condition improves, powders will be more serviceable. For some time after recovery the parts must be cleansed daily and the surface of the glans and the prepuce be separated by a film of cotton.

In men who are subject to frequent recurrences of balanitis, the mucous membrane may be rendered less sensitive and less liable to inflammation by the long-continued use of a powder containing from 10 grains to ½ ounce of tannic acid to the ounce of talc, starch, or lycopodium.

PHIMOSIS.

In severe forms of balano-posthitis—usually when secondary to chancre, chancroid, or gonorrhœa—the swelling and infiltration of the parts may be sufficient to prevent retraction of the prepuce back of the glans, thus producing an inflammatory phimosis. If a man with congenital phimosis more or less complete acquire a venereal disease, inflammation of the tissues is almost sure to follow, since cleansing of the parts is very difficult, and irritating discharges are retained in contact with the membrane.

Symptoms.—The swelling, œdema, and inflammatory symptoms may be slight, giving the patient little inconvenience, or they may be severe and very painful. The distended glans is then covered by a reddened, sensitive, and greatly swollen prepuce, increasing the distal extremity of the penis to several times its normal size and giving the organ a distorted or club shape (Fig. 12).

Fig. 12.—Phimosis from gonorrhœa (Cullerier).

The discharge escapes from the narrow opening of the prepuce, and may dry in bulky crusts around the thickened edges. Sometimes there is excessive œdema and swelling, with but slight inflammation and discharge. Pressure may interfere with circulation and result in gangrene of portions of the prepuce or rarely of the glans. Gangrene first appears upon the inner surface of the prepuce, and is preceded on the outer surface by evidences of interrupted circulation—namely, a dark-red, livid, or bluish color of the skin. If left to itself, the gangrene usually destroys enough of the prepuce to release the glans and relieve the pressure; the circulation being thus restored, the slough is thrown off and the surfaces cicatrize, leaving an irregular, ragged prepuce.

As a result of repeated inflammations the prepuce

may become permanently thickened and hardened, so that its retraction is impossible. When a series of soft chancres have been located at the orifice of the prepuce, the resulting scars may contract and produce phimosis.

Diagnosis.—An accurate diagnosis of the underlying conditions in inflammatory phimosis is difficult and often impossible. When syphilitic chancre is present and sufficiently developed, its induration may be felt through the prepuce, and typical enlargement of the inguinal glands may be detected. A hidden chancroid is frequently followed by one or more chancroids at the orifice of the prepuce, the result of auto-inoculation; and, since the retention beneath the prepuce of infectious pus favors absorption, such a chancre is apt to be followed by an inflammatory or a virulent bubo. In doubtful cases the history may be of value; or a few days of treatment may reduce the swelling and inflammation and render an accurate diagnosis possible. If gonorrhœa is present, it can be detected even when the meatus cannot be exposed. The preputial sac is cleansed by inserting between the glans and the prepuce the tip of a syringe or an irrigator and injecting an aseptic solution until the fluid comes away clear. The patient then urinates in one or two glasses. The presence of pus in the urine indicates gonorrhœa.

Treatment.—The preputial sac should be irrigated three or four times daily with warm water, which may contain 1 per cent. of carbolic acid or 3 per cent. of boric acid. The nozzle of the syringe or irrigator, gently inserted between the glans and the prepuce, should be directed in turn to every part of the sac, and sufficient fluid should be used to cleanse the sac thoroughly of all

pus and other accumulated matter. The flat nozzles made for this purpose are excellent, and their use excludes the possibility of injecting the urethra—a mistake that should carefully be avoided. The cleansing of the parts may be accomplished less perfectly by wiping out the sac with bits of cotton wrapped on the ends of wooden toothpicks. After cleansing the surfaces one of the soothing or astringent lotions recommended for balanitis may be injected into the sac. In the large majority of cases a few days of this treatment suffice to reduce the inflammation and to render retraction of the prepuce possible. If swelling and œdema are extensive and inflammatory symptoms are severe, the penis should be immersed for twenty minutes or more, several times daily, in hot saturated solutions of boric acid, and during the rest of the twenty-four hours should be supported by dressings that will hold it in the groin or over the pubes, in order that position may favor return circulation. If gangrene is feared, the patient should lie on his back, with the penis supported and constantly wrapped in boric-acid fomentations as hot as can be tolerated. Tonics should be given when indicated by the general condition of the patient. Circumcision is rarely necessary, and when performed upon an inflamed prepuce the operation gives unsatisfactory results. If gangrene is imminent, calling for immediate relief of pressure, or if it be necessary to expose a phagedenic chancre of the glans, it is well to slit up the dorsum of the prepuce. If soft chancre be present, any freshly cut surfaces are certain to become infected. If gangrene has begun in any part, pressure should be relieved by incisions, hot fomentations should be applied, and the patient should be kept quiet in bed. Quinine

and tonics should be given to meet the indications of each case.

In adults, congenital phimosis and phimosis due to thickening of the tissues or to cicatricial contraction should be treated by circumcision.

PARAPHIMOSIS.

When a short prepuce becomes inflamed and œdematous, it is apt to roll back of the glans, where it rapidly becomes more swollen and infiltrated until it cannot be returned to its normal position. This form of paraphimosis is usually mild in type. A more serious form often occurs where a longer prepuce with a narrow opening, especially if rendered yet narrower by inflammation, is slipped back of the glans. This may occur in coitus or in cleansing the glans, but is most frequently

FIG. 13.—Paraphimosis (Cullerier).

found complicating hard or soft chancres or other local disorder. The retraction may be the result of excessive swelling, of accident, or of failure to return the prepuce over the glans after local treatment and dressing.

Symptoms.—In spontaneous paraphimosis due to inflammation of a short prepuce the most prominent

symptom is the mass of swollen and œdematous tissue back of the glans. The swelling is often irregular in form, larger below than above, and is usually soft, puffy, or doughy. The glans is but slightly if at all affected, and subjective symptoms are wanting. If the condition is allowed to persist, the infiltration of the tissues may increase until the swelling becomes tense, white, and glistening. In such cases the glans becomes more or less swollen and darkened in hue, showing an interference with circulation. Strangulation rarely follows.

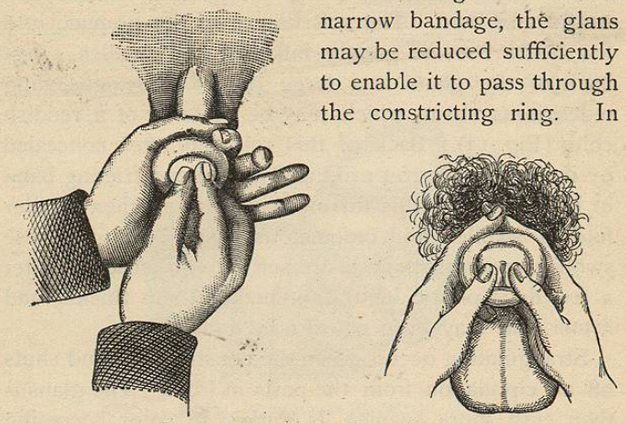
When a long prepuce with a tight opening is retracted and allowed to remain, it produces constriction of the penis back of the glans, which soon becomes turgid and livid. The soft tissues of the prepuce in a few hours become greatly inflamed and swollen. Just back of the glans is a large roll of tense, glistening œdematous tissue, which may be white or of a reddish color (Fig. 13). Back of this roll, and often concealed by it, is a deep furrow produced by the constricting band or ring. Behind this furrow is usually another smaller fold of swollen and œdematous tissue. At first these swollen, œdematous folds are soft though tense, but after a few days plastic infiltration makes them thicker and firmer, and may even cause adhesions.

Strangulation occurs when the constricting band shuts off all circulation from the parts in front. The glans is then even more swollen, is darker in color, becoming purplish or almost black, and is cold and insensitive to touch. If this condition be untreated, it is rapidly followed by gangrene of the prepuce or of the glans. Fortunately, in the large majority of cases gangrene destroys the constricting band in time to save the glans.

Treatment.—In all recent cases an attempt should be

made to return the glans back of the constricting ring. If reduction is not accomplished, and there is no immediate danger of strangulation, rest, elevation of the penis, and the constant application of boric-acid fomentations will promote absorption of the infiltration, and will in almost all cases render further operation unnecessary. In addition to fomentations, astringent lotions may be used. The affected part should be watched closely to prevent the possibility of strangulation and gangrene.

If strangulation occur, immediate reduction or operation is imperative. If an even pressure be exerted with the fingers or with a narrow bandage, the glans may be reduced sufficiently to enable it to pass through the constricting ring. In addition to pressure, ice or iced water may be applied, and the œdematous fold in front of the ring may be scarified in order to allow the serum to escape. If these measures fail, the patient should be put under the influence of an anæsthetic, when the resulting relaxation



FIGS. 14, 15.—Reduction of paraphimosis.

of the tissues greatly aids in reducing the paraphimosis. The corona and the adjacent portion of the prepuce should be oiled, and, when possible, some of the oil should be worked under the constricting band. With the thumb and the forefinger of the left hand encircling the body of the penis just back of the stricture, the glans is seized with the thumb, index, and middle fingers of the right hand, and by them squeezed into the smallest possible compass (Fig. 14). Pressure should be exerted laterally, in order so to reduce the diameter of the glans that the left thumb and forefinger may fetch over the preputial constriction. Sometimes the finger-nails may be worked under the constriction, and thus aid in the reduction. Keyes recommends seizing the penis behind the strictured prepuce in the fork of the index and middle fingers of both hands, one placed on each side. This method gives more even pressure forward. The glans is thus compressed between the two thumbs (Fig. 15). The rounded end of a hair-pin or a blunt-pointed director may be inserted under the constriction on each side, and the glans compressed between the digits while the prepuce is slipping forward.

With the patient under ether reduction can be accomplished in most cases if sufficient care and patience be exercised; but if all attempts fail, it is necessary to divide the constricting band of tissue. A tenotomy-knife or a blunt-pointed bistoury with the blade flat is inserted under the band. When possible, the blade is brought to the median line above before the knife is turned so as to bring the edge upward, and the ring is divided from within outward. After reduction the case may be treated as one of inflammatory phimosis.

In reducing paraphimosis so much manipulation and

handling of the parts are necessary that, in case a contagious ulcer is present, the surgeon is in danger of becoming infected unless the epidermis of his hands is sound.

In the older cases of paraphimosis in which œdema is the chief, if not the only, symptom, rest, position, and warm dressings may be supplemented by the application of pressure and of strong astringent lotions. For such cases Keyes recommends the free use of collodion.

VENEREAL WARTS.

This title is applied to vegetations appearing upon the genitals and the genital region. The term is not strictly accurate, for, while these warts are commonly associated with venereal diseases, and are almost always the result of exposure of a delicate membrane to venereal secretions (gonorrhœal, syphilitic, leucorrhœal, etc.), the lesions may spring from other causes (uncleanliness, warmth, and moisture). In pregnant women they are sometimes found bordering the vulva, where they are doubtless produced by irritating discharges. It is possible that these vegetations possess a distinct though feeble contagious element, but this contagiousness has never been demonstrated. In men the favorite location of venereal warts is in the sulcus back of the glans penis, but they are found over all parts of the glans and the prepuce, and occasionally within the urethra. They may also appear on any portion of the penis, scrotum, perineum, and inner surface of the thighs, and about the anus. In women they are commonly found over and about the vulva, over the perineum and anus, and sometimes within the vagina. They may be single, but they are usually multiple, and they vary in size from a single

filiform projection to a close aggregation of filiform or papillary elevations forming a mass as large as a hen's egg or even larger. Individual papillæ are usually acuminate, but may be rounded, club-shaped, or flattened. Instead of becoming aggregated in larger masses, they may appear as smaller but more numerous elevations; at times hundreds coexist upon the genitals and the neighboring regions. They may so fill the preputial sac as to cause phimosis, paraphimosis, or, rarely, gangrene. When situated on a free surface, where they are dry, they are firmer and have the color of the normal skin, but when protected and moistened they are softer, are pinkish or bright red in color, and are covered with a whitish or yellowish puriform mucus having a very offensive odor. The larger masses may be pedunculated or sessile, and form irregular-shaped vegetations resembling in appearance cauliflower or the comb of a cock. Under the influence of warmth and moisture they grow luxuriantly and rapidly by peripheral extension. When larger and flattened they may be mistaken for condylomata. The latter are broader and flatter than venereal warts, are not made up of so many small projections, and are found in connection with other evidences, or with a history, of syphilis. Papillary epithelioma may be distinguished from a venereal wart by the indurated base and border of the cancerous growth, its slower development, its tendency to degenerate and to form typical deep ulcers, and the infrequency with which it appears before the fortieth year.

Treatment.—Cleanliness is first in importance. In many cases, if the parts be kept clean and covered with a simple dusting-powder, the venereal growths gradually shrivel and disappear. The treatment recommended for