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HYPERTROPHIES OF THE LABIA MINORA AND THEIR SIGNIFICANCE.*

PART I.

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The presence and the meaning of certain alterations about the vulva are so little recognized—being practically unknown or ignored—not only by the medical profession but by gynecologists as well—that frank speech is called for. Four of the notable recent American text-books on gynecology depict what they call the type of normal virgin vulva in illustrations which show typically abnormal forms, all excellent examples of the deformities which will be described. Yet these changes are for the most part easily recognizable, whether in the stage of increase or of decline. Their etiology seems to the writer to be proven by a series of observations on 427 cases which exhibited the various hypertrophies.^a

Summary.

The type, or full development, of the deformity consists in a finely wrinkled and deeply pigmented enlargement of the labia minora and hypertrophy of some adjacent structures. Thickened, elongated, curled on themselves, thrown into tiny, close-set, irregular folds that cross at all angles, as in a cock's comb, the lesser labia protrude in all positions through the larger labia. The pigment deposit varies with the general type of coloring. One labium is sometimes greater than its fellow. The follicles are often conspicuous as whitish spots. The prepuce commonly, and the fourchette occasionally, participate in the corrugation and

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^a No studies taking causation into account and based on detailed analysis of a considerable clinical material have been presented.

duskiness or one of these may alone be affected. At times a wrinkled band runs off to the labium majus. Certain veins near the clitoris stand out. At the mouths of each urethral gland a flap-like protrusion may be seen. Greater power and size of the muscles of the pelvic floor accompany the other hypertrophies. Distinctive increase in the size of the clitoris may be present but, contrary to the general belief, it is infrequent. There may be seen enlargement and changes in the areolæ or in the breasts, resembling those of pregnancy.

At a later stage, flabbiness of the labia minora or pigment spots denote atrophy of the structures once enlarged, but the hall-marks never disappear. Some part or the whole of these alterations occur in about one-third of those women who suffer from pelvic disorders. One-fourth of the patients presenting hypertrophies belong in the neuropathic class.

These alterations are due to oft-repeated, prolonged sexual excitation, irrespective of coitus or gestation. Pressure or friction causes them. Pregnancy produces increase in size and some surface irregularity but never the fully developed changes here specified.

Extreme elasticity or relaxation of the vaginal outlet and hypertrophic enlargement of the vagina belong not to vulvar but to vaginal excitation. For completeness, these conditions will also be considered, particularly in barren women, though they occur in the latter cases only one-tenth as often as the external manifestations. The most striking cases show, among women who have never borne children, with a hymen to all appearance virgin, a distensibility which admits four fingers or the hand without discomfort.

The physiological increase in the power and in the yielding capacity of the pelvic floor due to both forms of massage has no important



FIG. 1.

Fig. 1.—Left labium minor of well-marked development. A to B, shining mucous membrane between the vestibule and the hymen on the inner side and the hypertrophied area outside. B to C, zone of large sebaceous glands, which lie in irregularly parallel lines, yellow against darker pigmented skin. In this area some wrinkling is found. C to D, zone of corrugation with fewer glands and much pigment. ($\frac{3}{4}$ life size.)

bearing on the expulsion stage of labor, for in well-handled cases no tear will occur. Excesses aggravate or produce neurasthenic conditions and pelvic congestions. Moderate indulgence seems to do little physical harm.

Frequency.—How often labial enlargement occurs among women in general no one may say.^b But among patients who present pelvic lesions, or who suffer from pelvic disorders, no inconsiderable number is found. In a series of 1,000 consecutive gynecological cases, I have been surprised to discover that 361, or more than one in three, showed two or more of the various vulvar hypertrophies which are here considered. In this check-list, all doubtful cases or those with slight changes were classed as free from alteration.

It was noted also that among 150 histories of neurasthenic patients and chronic or relapsing cases selected somewhat at random from the above series, the proportion of hypertrophies ranged up to 56 per cent. instead of 36 per cent.

Observe that it is said that at *some* period or other in the patient's life a cause was operative of which the marks remain—not that all were subjects of chronic genital excitation at the time of observation.

Classification.—In attempting an orderly statement of the matter we may somewhat arbitrarily divide the cases of hypertrophy into degrees, stages and varieties.

Degrees.—Enlargement:

1. Moderate;
2. Average;
3. Very great.

Stages.—

1. Increase;
2. Full development;
3. Atrophy.

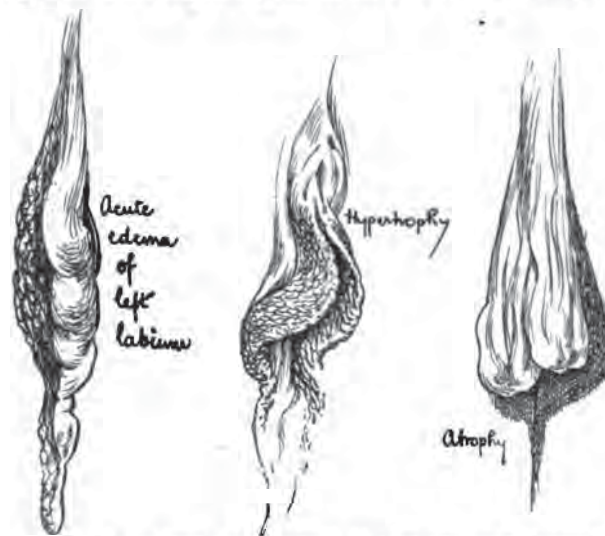
Varieties.—Hypertrophy affecting:

1. Labia minora proper;
2. Prepuce;
3. Fourchette and perineum;
4. Accessory nymphæ;
5. Clitoris;
6. Meatus;
7. Pelvic floor and levator;
8. Vagina;

or any combination of two or more of these.

^b Moraglia,¹⁴ in 200 Italian women of the lower class, found 120 admissions of onanism.

Development.—An imaginary case has the following history: After puberty the prepuce is a smooth tent over a small clitoris; the lesser labia are smooth and of an inverted V shape in transverse section—skin ridges hidden behind the cushions of the outer labia, pink in color; the meatus is little elevated; the openings of the vulvo-vaginal glands are hardly to be detected along the outer lateral edges of the hymen. A few months later one may find both labia minora larger, thicker, darker, a little ridged or with beginning folds on one or both and showing be-



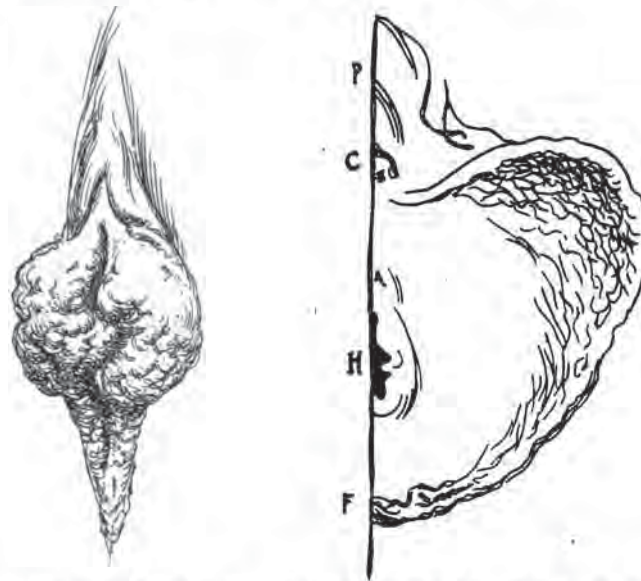
Figs. 2, 3 and 4.—Enlarged labia minora as they protrude through the majora. At the left the acute stage of increase is shown in one labium. In the center the cockscomb appearance with leathery texture and serrated edges and outstanding form as found in active hypertrophy of the firm variety. At the right are shown the flabbiness and atrophy found years after friction or pressure has been abandoned, and when firmness and the close-set, crosswise wrinkles have disappeared.

tween the majora. Perhaps one is distinctly edematous, thereby indicating recent trauma. Two to four years thereafter corrugation, or tiny folds, cover the surface wholly or partially and, in standing, the inner project $\frac{1}{4}$ or $\frac{1}{2}$ an inch between the outer lips, and they are darkened and much enlarged; one larger than the other. The prepuce shows some wrinkling; the Bartholinian duct openings are congested and white follicles show as spots or prominences.

Later still, a very great increase in the weatherbeaten appearance, in size, pigmentation and corrugation may develop, with hypertrophy at

the posterior side of the meatus urinarius and anterior end of the hymen. The labia minora hang down in folds like curtains, with one loop backward near the middle. The veins are prominent in the folds. The vulva is insensitive.

The last stage is shrinkage, with or without spotty pigment. The surfaces of the lesser labia become smoother as the muscular and elastic fibers under them atrophy; but the thin curtain-like lips still show distinctive increase in area—if not in thickness—and still hang in fine folds that cross no longer. The loss is never sufficient to bring them

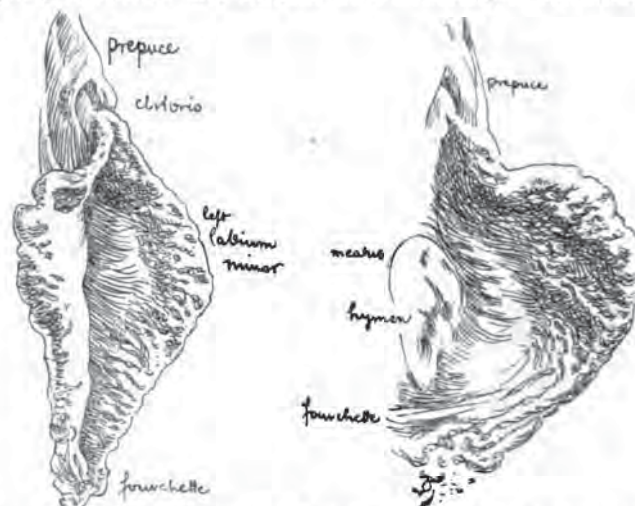


Figs. 5 and 6.—Full development in girl of 18, the rolls at the left representing the ordinary aspect of the pair of nymphæ as they hang or protrude beyond the closed rima pudendi. ($\frac{1}{2}$ life size.) On the right, the same vulva is drawn open, unfolding without stretching the left labium minor.

back to the former narrow ridge of projecting skin, though the cockscomb becomes smooth.

The *maximum alteration* (in vulvar cases in northern peoples) is shown in such a condition as the following: A young brunette, a virgin, of 18 or 20, well developed, of excellent antecedents and personal history, refined, reticent, studious, is suffering from headache, depression, dysmenorrhea, leucorrhea, bladder irritation and menorrhagia. The mammæ are large; the nipples prominent; the primary areola distinctly pigmented and elevated—while bearing small follicles, and

the secondary areola is plainly visible. There is some enteroptosis; the right kidney being low but presenting no symptoms. A strong growth of pubic hair covers thick, coarse-skinned labia majora. Between these outer labia protrudes a roll of brownish-black skin folds. Each inner labium is curled up or else hangs in a double fold, the anterior half partly concealing the rear portion. Drawn out, the projection reaches one inch (or sometimes two) beyond the majora—elastic, insensitive, thick, wrinkled in deep furrows. The enlarged sebaceous glands feel to the touch like numerous embedded grains of sand. The prepuce, thickened and thrown into wrinkles, is continuous with



Figs. 7 and 8.—Hypertrophied labia minora. The sketches show that portion of each which protrudes through the labia majora. In the left-hand drawing the nymphæ have been drawn apart slightly; in the right completely opened. Fulllest development, deep corrugation, soft and very elastic, with alteration in the fourchette also. ($\frac{3}{4}$ life size.)

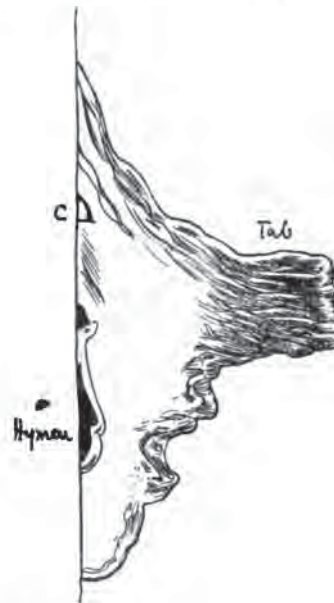
these labia. The minora unite in a sweep behind the vulva so that the fourchette is as dark and many-folded as they. Laterally, from them, two bridges of the same fine-laid folds and furrows run across the shallow sulcus that lies between inner and outer labium on to the labia majora, like an accessory or intermediate pair of smaller labia; this fold hangs up or puckers the center of each labium minor. The prepuce is partly adherent and underneath it smegma lies hidden. The meatus presents two curious flaps when drawn open. Into these flaps or ridges the forward edges of the hymen run. The openings of the glands of Bartholin and of Skene are red and gaping; the hymen is too

small to admit the finger tip. The anus is surrounded with small piles and is pigmented like the labia minora. All these changes together are rarely seen in the same individual.

Notes are at hand of progressive alteration in certain cases but the entire series of alterations has not been followed in a single individual.

Changes in the labia minor proper.—This is the most frequent location of hypertrophy. It was well marked in 65 per cent. of the 367 cases in which a detailed statement of the varieties of hypertrophy was entered. The appearances have been described. Rarely there is great

Fig. 9.—Partial hypertrophy or tab, pendant from the center of one labium minor. ($\frac{1}{2}$ life size.)



increase in size and thickness without the typical corrugation or folding. In their beginnings the alterations are not always easy to identify. In their extreme form they have long been known under the term "Hottentoten-Schuerzen." This designation is a gross error. It is no racial peculiarity of the Bushman tribes, but common to Europe and America.

I find at least 29 cases among my notes of labia which are 3 to 5 cm. in projection (transverse diameter), namely: as long as those of most of the carefully recorded cases among the Hottentots. Three centimeters, and four, are very common dimensions, measured at right angles to the greatest width of the labium, the outer end of this diame-

ter on the furthest sweep of the outspread nympha, the inner end about midway on a line drawn from clitoris to the rear end of the nympha. By stretching a labium can be doubled in its dimensions.

The largest development the writer has seen, measured from tip to tip of the labia very gently stretched in the form of the wings of a butterfly or bird, was 15 cm. (6 inches), each labium measuring 7.5 cm. (3 inches). These could be pulled by moderate traction to nearly 22 cm. (9 inches) spread.

Asymmetry is less frequent than equal development. Among all the cases of vulvar hypertrophy, unequal development of the labia minora was noted in 12 per cent., and in order of frequency the two sides were nearly alike. The enlarged portion may be located at any place along the edge of the labium but is usually anterior or central. In its extreme form one lip will be normal while the opposite one hangs in a long curtain or tab. In such case the thickened portion is often in the shape of a long rectangle pendant from the center of the labium.c.

c. The average normal size is 25 to 35 mm. in length (1 to 1¼ inches); 8 to 15 mm. in height (⅓ to ⅔ inch); 3 to 5 mm. in thickness (⅛ to ¼ inch).

The basic structure of the labia minora is a fine connective tissue rich in elastic fibers, with smooth muscle fibers and numerous wide veins, which give to it the character of an erectile structure. The actual fact is that the "little shame-lips" are capable of turgescence resembling erection during sexual excitement (Waldeyer²⁷). Gussenbauer calls this structure "cavernous" and Ballantyne¹ speaks of the muscle fibers "surrounding the vessels." The nerve end-organs, says the last observer, are prominent structures in the normal nympha of the adult.

Carrard⁸ examined a pair of enlarged nymphæ removed by Chrobak. He saw no enlargement of the vessels but a great increase in the number of nerves and in the twist of them. "As a striking development it may be stated that relatively large (maechtige) bundles of axis-carrying fibers reach close to the epidermis." Carrard tells of adenoid growth about the opening of the sebaceous glands. He found Meissner's touch corpuscles in normal labia occurring in the papillæ and resembling those found (and only found elsewhere) in the palm of the hand and sole of the foot, in the nipple, on the eyelid edges, the flexor surface of the forearm, the vermilion edge of the lip and the clitoris. In the hypertrophied cases he found: 1st, enlarged Meissner's corpuscles; 2d, globular terminal bulbs, with increased cellular elements; 3d, a peculiar end-organ. Ballantyne¹ finds the first two, Krause only the globular end-organs, Schweigger-Seidel and Kölliker only Pacinian corpuscles. Webster²⁸ found (a) a few Pacini or Vater corpuscles, (b) Krause's end-bulbs as the most numerous form of nerve ending, both in the papillæ and in the deeper layers of the corium (in the prepuce he detected globular endings resembling the genital corpuscle which Krause limits to the clitoris) and finally, though rarely, (c) Wagner and Meissner touch corpuscles. In the clitoris Webster found Meissner corpuscles, (a few) end-bulbs, Pacini corpuscles and the genital corpuscles of Krause. In

Follicles.—Flat or elevated, white, whitish-yellow, or yellowish spots were distinctive in 15 per cent. or more. These are most typical when located on the inner aspect of the labia minora but they occur about the perineum and inside the labia majora right and left of the clitoris. In the latter location they protrude like gooseflesh.

Changes in the prepuce.—The hood over the clitoris may or may not take part in the enlargement of the labia minora or it alone may undergo characteristic alteration. In frequency of occurrence it ranks only

cases of pruritus Webster determined a slowly progressing fibrosis affecting chiefly the nerves and nerve endings of the clitoris and labia minora. Many of the nerves acquire a dense fibrous character, some appearing as well-marked fibrous cords, the nerve fibers being compressed or destroyed. The end corpuscles show the same changes. These changes are most marked in the clitoris and in the genital corpuscles. In the connective-tissue framework of the nymphæ and clitoris the changes are of a subacute inflammatory nature, evidently more

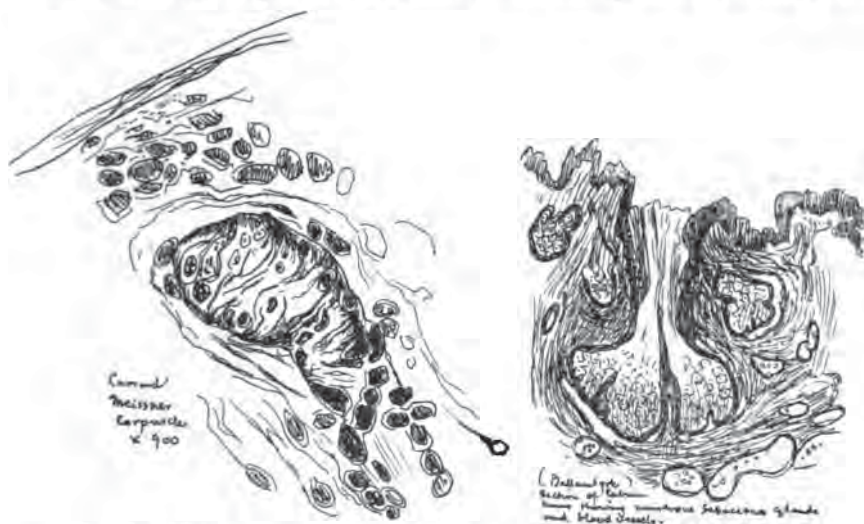


Fig. A.—Meissner touch corpuscle (Carrard, x 600).

Fig. B.—Section of labium showing numerous enlarged sebaceous glands and blood vessels (Ballantyne).

recent in origin than those in the nerve structures. They are found most marked in the corium under the papillæ and affect especially the prepuce and nymphæ, being found in the clitoris only in the glands under the epithelium and much less marked than in the labia minora. In the corium of the latter are seen many minute vessels with abundant exudation of leucocytes into the perivascular lymphatics, while in many parts the subepithelial tissue is a mass of leucocytes and proliferating connective-tissue corpuscles. "These changes are most marked in the hypertrophied nymphæ. They are distinct from the chronic

second to enlargement of the nymphæ, as it was present in 52 per cent. of these cases. This alteration is the same in character and in significance as that of the minora. Such thickening, wrinkling into folds or even into many layers—with or without pigment—is usually symmetrical but may be one-sided or involve only a single part. One foreskin lay in three thick folds, each 8 mm. in transverse diameter. Such increase in size is independent of and to be distinguished from increase in size of the clitoris that lies beneath it. A minute clitoris with a large

fibrosis affecting the nervous structures and are no doubt due to long-continued irritation and scratching. They affect chiefly the superficial parts, viz., the prepuce and nymphæ, the nerve fibrosis being most marked in the clitoris." Webster has sectioned hypertrophied nymphæ, but does not seem to recognize the more frequent cause and does not differentiate between pruritus and onanism.

Ballantyne¹ found, in a large wrinkled labium removed by Simpson, "an enormous number" of sebaceous glands each made up of several oblong alveoli. Here the connective-tissue stroma and epithelial layers were increased, but not the blood vessels. In a second case there were few sebaceous glands, no adenoid



Figs. C, D and E.—Some of the famous cases of Hottentot aprons, showing instances (poorly drawn) of the ordinary hypertrophies of prepuce, nymphæ, fourchette, meatus and anterior vestibular folds.

tissue of Carrard, but an increase in the nerve ends. Both, to my mind, were clearly masturbators.

While a length of 12.5 to 18 cm. (5 to 7 inches) is spoken of in the references to these enlarged labia minora among Hottentots, as if such size were frequently encountered, and while the "fleshy" cushions are supposed to hang down as far as the middle of the thigh, it is to be noted that the three autopsies on women of Bushman tribes by Cuvier, Luschka and Fowler² and also Waldeyer's, only showed a projection of 3 to 5 cm. (1½ to 2 inches) and the picture of Cuvier's case in Cloquet's *Anatomie*³ shows a strongly stretched labium. This is a size not infrequently encountered in northern countries, and found among American

hood is not uncommon, and conversely a long organ beneath the hood may give the impression of thickening of its cover. Four times, in the presence of other hypertrophies, the entire absence of prepuce is noted. In infants this enlargement is the most frequent and characteristic alteration from friction.^d

Changes in the clitoris.—These may consist in alteration in shape, in consistence or in size. A slight permanent increase in size is probably present in most victims of repeated excitation but this is inappreciable and is worthless as an index of the duration of any habit or of the harm done. In few instances has the writer seen any decided increase in size and as it has been determined only 36 times among 367 cases in which were well-marked and distinctive changes (in 10 per cent.) he submits that this hypertrophy should not have undue stress laid upon it. He has only once seen any degree of penis-like elongation. Increase in bulk is the usual alteration and more particularly in sub-

whites and negroes. Barrow⁷ says the nymphæ develop with the growth of the woman; the largest actual measurement he records is the largest I can find in the literature, namely, 5 inches (12.5 cm.). Perron¹⁸ speaks of 3 inches (7.5 cm.). Blanchard's picture of a "*tablier*" is evidently a fleshy exaggeration, badly drawn. Broca, Karl Schroeder, Hartmann, Ploss and doubtless many others have drawn attention to the fact that these great labia are not confined to Africa, but are encountered among the women of France and Germany. Winckel¹⁰ has found a length of 9.5 and 11.5 cm. Bergh⁸ saw, in 2,981 cases, 146 of 2 cm., 170 of 3 cm., 32 of 4 to 5 cm., 20 of 5 to 6 cm.

In thirty years service as chief of Danish female venereal services Bergh⁸ had an opportunity of observing variations in the form of the genitalia of young women, mostly between the ages of 20 and 30, all clandestine prostitutes. He took notes and sketches in one series of 2,200 cases. In 725 instances the labia majora were in apposition, that is, 33 per cent. had little or no labial or preputial enlargement; 648 had had children. Therefore, if every parous woman had nymphæ projecting, the remaining imparous women would show 40 per cent. of protruding (or hypertrophied) nymphæ. Of the 1,274 instances in which either prepuce or labia minora showed in the rima pudendi, in 141 the prepuce alone projected, in 60 the nymphæ alone. In only 18, and these very young, were the labia majora so defectively developed that the minora would show from this cause. Among his cases left-sided enlargement predominated over right-sided. He does not appreciate the significance of these hypertrophies of the labia minora, which were notably large in 12 per cent. of 2,981 cases, small in 8 per cent., unequal in 10 per cent., continuous across the fourchette in 43 per cent. (!) though the fourchette was hypertrophied in only 5½ per cent.

Bergh found asymmetry in 10 per cent. of clandestine prostitutes. Winckel¹⁰ found it in 19 per cent. of pregnant women.

d. Among very young children, observers are agreed that the trouble is more often found in girls (Hirschsprung¹⁹).

preputial length. Flattening into a ridge or tent-shape is not uncommon.^e

A case of enlarged clitoris is reported, to show the approximation (when hypertrophied) to the male type of organ, and to draw attention

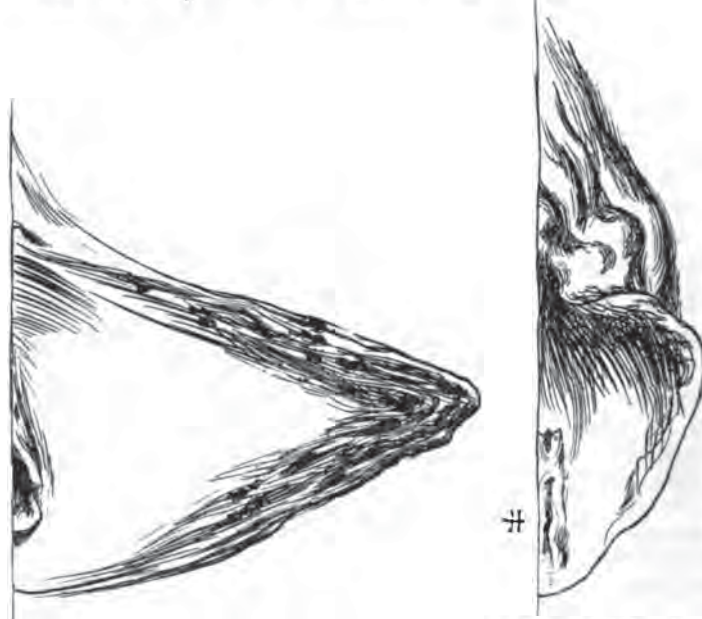


Fig. 10.—Pigment spots on large darkened labia where atrophy is present. ($\frac{3}{4}$ life.)

Fig. 11.—Great enlargement of the prepuce. The folded hood is here shown drawn back.

to the ease with which these strange cases may claim to be hermaphrodites.

Mrs. A. B., 25, Austrian, poor and dull of mind, is fairly developed

^e. The average measurement of the glans is 6-7 mm., either way (Testut) (5 mm. to 6 mm., Waldeyer). The coronæ join under the pubic arch to form the corpus clitoridis, which measures 25 to 30 mm. in length (Testut), 20 to 25 (Waldeyer); or 30 mm. when erect (preparation in Berlin Anat. Museum, W. Krause).

Cruveilhier⁸ had a case in which the free portion measured 5 cm. (2 inches). It may attain a length of 13 cm. (5½ inches) according to Tarnier and Chantreil.²⁴ Parent-Duchatelet¹⁷ saw three times, among 6,000 loose women, an organ as large as the penis. No enlargement of the clitoris is found among the Hottentots. Otto's case¹⁸ is a negress.

Martineau¹⁹ calls flattening a certain sign of sapphism. He is wrong in declaring that enlargement of the clitoris is the most frequent sign of onanism.

and in good health. Her voice is husky and there is no hair on her face. Her breasts and nipples are almost masculine. She never menstruated. Masturbation began at 14. She complains of dyspareunia but at times has some gratification in the sex-act. Measured from the summit of the pubic arch, the clitoris is 5 cm. (2 inches) long but is shrouded in a loose, thick and bulky prepuce, which produces a conical shape of the entire organ and when lying forward nearly covers the glans. The glans is 13 mm. in transverse diameter, with the perfectly formed corona and groove of a small boy's organ without meatus, but



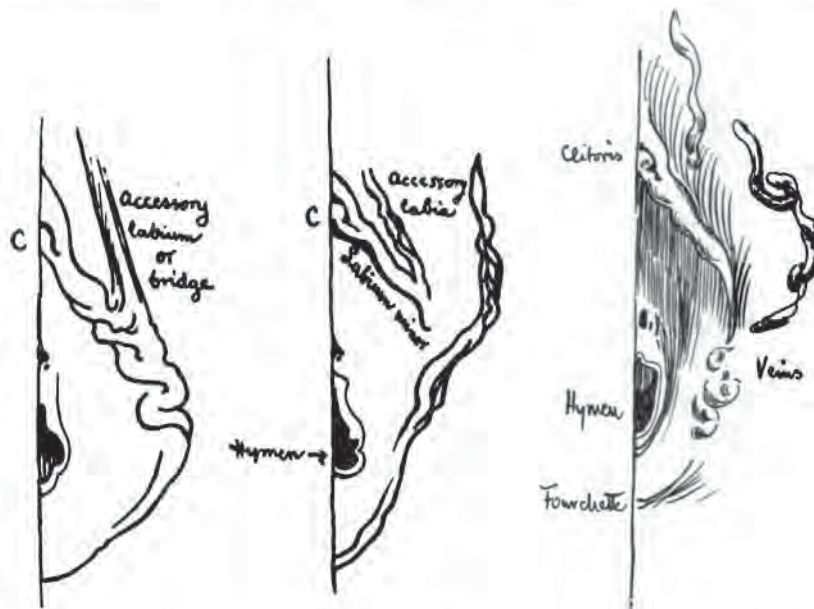
Fig. 12.—Hypertrophied clitoris, life size, with wrinkled nymphae, showing line of junction of mucous membrane and skin on the inner aspect.

Fig. 13.—Hypertrophied clitoris, from the side, life size, showing the male form of the glans.

with a shallow slit where it would be. The voluminous prepuce, studded with large follicles, is continuous on each side of and behind the clitoris as the labia minora. These bear the typical pigmented corrugations produced by long traction and end normally at the usual spot on the labia majora. The fourchette is normal. The junction of the mucous membrane and the skin is clearly defined in the usual location about the enlarged vestibule. The clitoris has little erectility and no rigidity. The meatus urinarius is 4 cm. below the clitoris when this is drawn upward and is close in front of the hymenal opening, a little to the left side. The vaginal opening is tiny, admitting one finger

freely for two phalanges. There is probably a rudimentary uterus and ovaries. The patient says the clitoris began to grow large at 14, when she was given to much rubbing. It may have been developed in this way but it seems to me far more probable that in its original form it was congenitally large.

Absence of the clitoris has been encountered twice and a very minute size, notwithstanding the presence of other large abnormal development, is not infrequent. In these cases the prepuce cannot be



Figs. 14 and 15.—Accessory labia or bridges to labia majora. These are corrugated ridges running parallel to or at an angle over the labia majora; diagram. Fig. 16.—Veins enlarged. The most frequent locations.

stripped away. The glans clitoridis seems sclerotic, hard, fibrous, without projection or erectility. Infants and children before puberty furnish an exception to the above generalization concerning the relative infrequency of enlargement of the clitoris. In them the habit of masturbation usually brings about bigness, which falls away when the habit is broken up.

Accumulations beneath the prepuce.—These may be easily removed by drawing back the hood or they may be deeply pocketed, particularly

at the apex. Under the adherent foreskin the smegma is sometimes found in tiny, hard pellets, white and glistening, firmly adherent.

Accessory labia or bridges.—Starting from the middle of the outer aspect of a labium minus, a wrinkled and pigmented fold crosses the gully between labium minus and labium majus to the majus, on the inner surface of which it loses itself in its course diagonally forward and outward or directly forward. It may be one-sided or double. It may be located only on the inner aspect of labium majus, paralleling

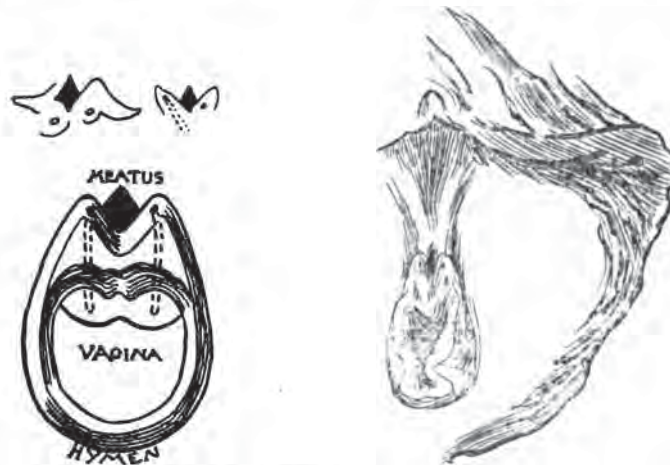


Fig. 17.—Diagram of relation of the vestibular tabs to the hymen and urethral glands. These ducts are elongated and end in the columns of the anterior vaginal wall.

Fig. 18.—Tabs about the meatus and the anterior vestibular folds. Changes about the meatus in girl of 14. An ear or tab projects forward on each side upward from the hymen, and the urethral glands open near each apex. ($\frac{3}{4}$ life size.)

or duplicating the labium minus. As the patient lies on her back with the thighs apart, it usually hangs perpendicular, running straight downward to the most prominent part of the curtain of the enlarged labium minus. These folds are found in 8 per cent. of my cases, left-sided enlargement preponderating a little, as in the case of the labia minora.*f.*

f. Bergh⁸ calls these "Verdoppelungen, Nebenfalten, Secundaere Nymphen." He found them in 1 per cent. of 2,981 cases, 10 on both sides, 6 on the right, 13 on the left. Running, not diagonally, but at right angles (sic) to the nymphæ, he counted 8 double and 25 left-sided ridges.

Veins.—Among minor enlargements of frequent occurrence, localized varicosities may be mentioned. Being frequent in married women, they signify no more than repeated engorgement. They were mentioned in 22 per cent. of the cases listed. These are not the every-day masses of veins resembling a bunch of angleworms seen in pregnancy or in patients with varices of the lower limbs. In our cases certain surface vessels showed a frequent if not constant tendency to enlargement, and more particularly in the blonde. These vessels lay:

1. On the inner aspect of the labia majora, parallel with the minora, about as far forward as the clitoris or converging toward the prepuce, close to the clitoris.

Fig. 19.—Solid urethral flaps on each side of a dilated urethral opening. To the right a diagram showing the course of the ducts.



2. On the inner surface of the majora, curling backward and inward to the base of the small-sized labia minora, often paralleling the first pair, placed outside them, longer, reaching further to the rear.
3. Between the usual point of termination of the nymphæ and the fourchette.
4. In the fossa navicularis (one case).
5. Anterior to the clitoris (two cases).

Changes at the urinary meatus.—The shape of the opening is various—either triangular, crescentic, in the shape of a cross or as a longitudinal slit.

The meatus is usually triangular in shape, the sides of the triangle curving inward, the apex toward the clitoris. The posterior side fre-

quently bears a notch or dip at its center. On this rear side near each outer angle the openings of the urethral glands are usually found, though their location varies considerably. At these lower outer angles, in our cases of hypertrophy, a curious pair of flaps or tabs was noted in about 20 per cent. of the list *g*. At times pyramidal and broad of base, merging into the anterior fold of the hymen on the rear or vaginal side; at times thick or crescentic, and again pointed or earlike; these



Fig. 20.—Fourchette and perineum corrugated and thickened. ($\frac{3}{4}$ life size.)

protrusions lie against the sides of the meatus, or point toward the clitoris, and it is only by drawing the hymen open, or the meatus well apart, that their shape is developed, often projecting 2 to 5 mm. I have seen protrusions 7 mm. thick at the base, 20 mm. in height, looking almost like tiny nymphæ. Just within (at times without) the apex of each flap the opening of a urethral or Skene's gland is found. A filiform

g. Waldeyer²⁸ says these ledges and lapels hang out of the urethra with the folds of the urethral mucous membrane. I think them enlargements of part of the meatus. They are sometimes rigid and rounded.

bougie or fine silver probe develops the fact that the gland is much longer than normal, often running downward and backward into the anterior column of the vagina. Several gland openings may be seen. This anterior end of the hymen may be the only part of that structure which has undergone alteration; its folds are thick and a prominent ridge connects directly with the meatus flaps as shown in the diagram. Two diverging ridges sometimes run forward from the meatus.^h

Three forms of alteration at the meatus have been noted, namely: dilatibility, dilatation with and dilatation without hypertrophy. Varicosity, prolapse of the mucous lining of the urethra or caruncle may be present. Inflammation, catarrh or suppuration in the urethral glands is not infrequent. The openings may gape, reddened and tender. In advanced cases of the vaginal habit the meatus will admit the tip of the little finger for a short distance and without discomfort. In others, the opening gapes, the orifice of the Skene glands marking the outer angles. In the worst instances, the flaps stand out on each side of a gaping slit. In all a complete lack of sensitiveness within the meatus for at least a half inch is notable. The Kelly cystoscope No. 14 goes in through the lower half with ease. In two cases incontinence was present. In both these instances the vulva and vagina had evidently been exhausted as locations for producing sensation. The urethra then was the only new surface remaining.

Changes in the hymen.—The average normal virgin hymen is puckered, sensitive, small in its opening and relatively inelastic. That is, if the patient has not used the douche nozzle and has never been under examination and treatment and the hymen has been subject to no touching, the average forefinger will pass with difficulty or not at all. If it passes to one or two phalanges, a sharp tight edge will be felt and pain will be complained of. Under careful and gradual dilatation, brought about by regular vaginal douching, or careful gynecological treatment with a small speculum, or manualization, no tear occurs, but the elastic quality increases sometimes phenomenally and sensitiveness diminishes and disappears.

If the stretching is not too great or too long continued the former characters are again taken on. If either of the three causes of dilatation are persistent the sharpness of edge disappears, the tenderness lessens and in proportion to the duration and extent of these processes resiliency and callousness are found. Intact hymens that stretch to a

^h. These are hypertrophies and not the "*bride masculine*" of Pozzi,² nor are they the "*brides verticales*" of Sinety.³ They are well shown in the cut in Cloquet's *Anatomie*, Fig. C.

six to nine inch circumference (through which a widely opened Cusco speculum can be readily drawn out) were seen in nulliparous women in 15 instances. Some of these had been under treatment of other physicians but to no speculum could such a degree of stretching be credited.

Insensitiveness of the whole pelvic floor is striking in advanced cases. In the most extreme cases (dilatable to 6-inch circumference or over) the hymenal orifice may or may not gape. This depends on the tonicity of the pelvic floor muscles. In certain women who assert that they have never had intercourse and who show no evidence of child-bearing, the vaginal opening will gape widely, the untorn hymen hang out and the posterior vaginal wall protrude or at least pouch plainly through the open hymen, a flat continuation, on its anterior or inner side, of the posterior vaginal wall. In other cases the hymen seems partly effaced and worn away, as it were.ⁱ

Changes about the fourchette and perineum.—The fourchette is often altered as a continuation of the labia minora, with the same characters of wrinkling and pigmentation (in 10 per cent. of the list). It alone may be affected or the corrugated fourchette may constitute the chief hypertrophy. Then the closed labia majora show nothing protruding but the puckered fourchette. When drawn open a "rear crescent" of parallel folds is found, its concavity facing forward. A rugose, many-folded or puckered and elevated band may cross the skin surface of the perineal body in any direction and this may run to the anus (5 per cent.). In the most pronounced cases two parallel bands run across the perineum longitudinally, as continuations of the enlarged nymphæ, backward to the anus. Piles and skin tabs about the anus are a frequent accompaniment of fully developed cases. Deep pigmentation about the anus accompanies the other pigment deposits. Piles are rather common. In these cases which show increase in elastic fiber in the perineum and fourchette injury in labor rarely occurs. Herein they resemble patients addicted to vaginal excitation.^j

ⁱ. The hymen is made up of two surfaces of mucous membrane between which stands a layer of connective tissue very rich in elastic fibers (Testut). Budin and Ledru say there are smooth muscle fibers also. In my cases it is certain that the elastic fibers, and possibly the muscular fibers, are developed to their utmost by gradual dilatation. In the tough hymens that require incision it is the connective-tissue element which is in excess.

^j. Blacker⁸ studied the location of the fourchette in 348 women who had suffered no injury to that structure. In 15 per cent. he found it was formed by the united posterior extremities of the labia minora, in the others it was a fold of skin apparently uniting the posterior extremities of the labia majora.

Changes in the blonde.—Enlargement of the labia occurs in the blonde to the same degree but perhaps less commonly than in the brunskins. Large, blue veins are more readily identified than in darker skins. The follicles are white and more conspicuous. There is little pigment deposit. In true blondes—the “negative” or “washed” blonde as distinguished from the “positive” or “tawny” blonde—pigmentation is rare. Yet once on huge nymphæ in such a patient the whole was of the deepest blue-black tint. On the inner face of the labia majora, above the clitoris, or alongside it, the hypertrophied follicles project like gooseflesh but with a polished surface. A much more distinctive character is the enlargement of follicles that show as close-set, large, flat, yellowish-white spots on the inner face of the labia minora or, laterally, outside the fourchette. These are seen chiefly where inelastic, unwrinkled thickening of the labia has occurred.

Changes in the muscles of the pelvic floor.—In the earlier stages the ever-present evidence of hypertrophy is vaginismus, due to increased irritability. The levator ani of the dead house is an altogether different muscle from the levator alive. The levator of the woman lying relaxed on the examining table is a different muscle, in form, from that of the same woman standing, balanced on her feet. The first is dead—a thin layer of loose-lying fibers, hard to isolate. The second is relaxed, especially in its middle and upper sections; but the third, like all the balancing muscles, is in action throughout and draws half the pelvic floor forward and upward.

The drawings of this muscle in the books, as seen from below, bear no resemblance to the shape of the contracting bands as determined by palpation. An inch within the hymen, to right and left of the vagina,

In virgins $33\frac{1}{3}$ per cent. showed nymphæ and fourchette continuous. Of the 52 constituting the above 15 per cent., 19 were hypertrophied, or $3\frac{1}{2}$ per cent. of the total. I draw attention to the fact that any symmetric hypertrophy of the nymphæ very commonly develops the fourchette. Therefore, when Ballantyne says that the histological structure of the fourchette proves that it is part of the labia minora, I can endorse it by saying that any pathological development attests the same thing. Blacker further strengthens my statement that massage of the pelvic floor—that is, either the vaginal form of masturbation, or, in this instance, the vulvar form wherein fourchette and perineum are affected—renders the outlet immune to injury in delivery by finding that among women with a labial fourchette 40 per cent. were torn in labor, whereas of those with nymphal fourchettes only $8\frac{1}{2}$ per cent. tore.

Bergh⁷ found the perineum corrugated in 188 out of 2,200 women; that is, in 9 per cent. In 120 the lines were parallel and symmetric, 39 were on the left only, 26 on the right only. The fourchette continued across between the labia in 43 per cent.

one finds a ribbon with an edge as thick as a pencil—to wit, the inner edge of the pubo-coccygeal part of the fan. In cases of hypertrophy this edge is hard and thick and swells inward in a bow shape, like the center of any other contracting muscle. One side is usually more developed than the other, the left being usually the larger. Indeed the group of pelvic-floor muscles, as they contract, seem almost to cross the pelvic outlet transversely, leaving a small triangular gap under the pubic arch.

In nearly 40 per cent. of all cases noted there was present an increased vigor of the levator; in some, spasm; in some, relaxation, but always a strong muscular contraction at will.

In a late stage of the habit, and also where the vagina has been subjected to friction for years, the pelvic floor muscles are much relaxed. But the capacity for vigorous contraction shows how rare real atrophy is. That the vulva gapes under ether on the operating table gives no clue as to the contracting power of the muscle but only states its relaxing power or limit.

Changes in the vagina.—There seem to be two characters of lining in the greatly enlarged vagina. Either the number and prominence of the rugose folds are notably increased or else the wall is flabby and smooth. The latter may be atrophy and a later change than the first or it may be due to friction, especially when we find it on the anterior wall alone. In both cases the voluminous bag presents gross foldings as though the patient has been recently delivered. One of these folds falls transversely at or below the cervix level on the posterior wall. The anterior columns are big and prominent. The whole mucous membrane in the first class gives the impression of increased thickness to the touch. Its exhausted sensibility is shown by the powerful pressure to which it is subjected and by the use of rough implements like kindling wood, that cause bleeding; or of great size, as a vinegar cruet or vichy glass—all of which the writer has had to extract in pieces in certain cases. The posterior wall, even in the nullipara, may pouch partly outward through the distended hymen or be level and continuous with the protruding level posterior lip of the hymen.

Effect on intermittent contractions and contours of uterus.—In well-marked cases of hypertrophies about the vulva and the pelvic-floor muscles, the uterine muscular walls also undergo certain changes. It is now an accepted fact that the imparous uterus relaxes and contracts at more or less regular intervals; changing in form, in outline, in density or consistence under the examining hands. Lindbloom, Acconci and the writer have borne witness to this. In the cases we are

studying these developments are more definite and distinctive than in any other condition, save early pregnancy. Indeed, in some instances pregnancy in the earlier weeks is counterfeited. The cervix is of a nearly uniform density and shape. It is the body that vacillates. When the uterus is relaxed, the corpus uteri is flattened, (relatively) soft or slightly compressible, broad, with somewhat indistinct lateral contours. Partly contracted, it assumes a more rounded shape, increasing particularly in the antero-posterior diameters. Firmly contracted—and herein lies the most distinctive and easily detected alteration—the body is hard and clearly outlined, asymmetric and knobbed or ridged. The writer has fully described this condition under the head of ridges, furrows and prominences on the imparous uterus. He shows how one portion of the corpus may be hard (firmly contracted) and another part softer or more compressible (relaxed). Asymmetric contraction and the above findings are more commonly detected during the period of the active stage of the habit than in other patients.

To summarize the alterations found in all those cases of hypertrophy in which definite notes were made of the character of the anatomical changes at the vulva we determine, in 367 instances, as follows:

Relative frequency of the various hypertrophies and changes at the vulva.

Labia minora hypertrophied in (239).....	65 per cent.	
(Among these, single labium enlarged (44) in 12 per cent.; as between right and left nearly equal, 21-23.)		
Prepuce adherent (109)	27	" "
Prepuce enlarged (192)	52	" "
Fourchette (10 per cent.) and perineum (5 per cent.)		
corrugated and pigmented	15	" "
Clitoris enlarged (36)	10	" "
Accessory labia or bridges (29)	8	" "
Follicles conspicuous (41)	11	" "
Veins prominent (82)	22	" "
Alterations at the meatus (estimated about).....	20	" "
Pronounced vaginal relaxation and hypertrophy....	7	" "
Levator strongly developed.....	40	" "

Causation of hypertrophies about the vulva.—Enlargement with increased vascularity of all parts of the pelvic floor occurs normally in pregnancy. The veins become prominent, the labia minora hypertrophy

and become thickened and notched on the edges in many cases. Some of this enlargement is permanent, so that the inner labia protrude between the outer.

A sufficient number of histories have been volunteered or frankly stated, in typical cases of abnormal enlargement, to warrant the belief, in the writer's mind, that all much-enlarged deeply wrinkled nymphæ are the result of numberless congestions or tractions. In 127 instances (30 per cent. of the cases here studied) full admission has been made. Therefore it is fair to suppose that the same findings in the remainder are due to the same cause, even though categorically denied as with seven patients showing very marked enlargements. Denial with subsequent avowal is often encountered. Pressure, as with the crossed thighs, is as productive of the hypertrophy as is friction. It is probable that, inasmuch as the increase in size occurs chiefly in the labia minora, it is to them that that irritation is applied. Ploss¹⁹ shows conclusively that traction and manualization systematically employed produce the Hottentoten-Schuerzen. To and fro sliding of the labia or prepuce against the pubic arch would seem to be a method more commonly applied than the attack at the clitoris and furnishes an adequate explanation for the increase in elastic and smooth muscular fibers in the skin folds. While manualization probably plays the largest rôle, pressure is also a process of producing the sensation. The up-tilted bicycle saddle has only three times been the means.^k

Location.—Cases of the solitary sexual habit may be grouped as mental, mammary, vulvar, vaginal and urethral. Any progression or combination is possible.

The first kind, occurring in the subject of dreams or emissions, may develop no sign to point toward the mental misery.

The third shows itself—in the infant always in hypertrophy of the prepuce with or without pigmentation, with or without enlargement of the clitoris; in the adult by the signs above enumerated.

Though mentioned in French literature, no instance of the mammary as the chief or only method of excitation has been known to the writer. Marked mammary enlargement and pigmentation, with development about the nipple resembling pregnancy, are not rare among masturbators. It was noted in about 10 per cent. but was not always looked for, so that this percentage is not accurate. The nipple is less often enlarged than the follicles of Montgomery. Elevation of the primary areola

^k. All observers agree that there is no change in the outer genitalia in prostitutes which is due to or significant of their profession (Parent-Duchatelet,¹⁷ Bergh,⁸ Martineau.¹⁸)

with rose coloration occurs in the blonde; wrinkling (erroneously labelled erectility) of the primary areola may be present and the veins are occasionally distinct. Among some African negro races the elevated primary areola is found in young girls, as may be seen in the pictures of Ploss²⁰ and Stratz.²⁵ Pigmentation of both primary and secondary areola is usual in the brunette. The whole picture is a fainter development of the changes due to gestation.

The *vaginal habit* may or may not be a later stage of vulvar excitation in any given instance. The very gradual dilatation of the hymen, extending over a long period, explains the remarkable freedom from injury and the astonishing elasticity of the aggravated cases. The writer has seen at least fifteen non-parous women in whom the hymen readily yielded to a circle of 6 to 9 inches (15-22 cm.), admitting the four fingers or the fist. Yet some of these hymens spring back to a closed puckered circle which the eye cannot distinguish from the virgin hymen. This condition, however, is not to be confounded with what may be the later stage of the same habit, wherein relaxation has taken place and the vulva sags open, though the woman may have had no children at term. The full-term head cannot tear these elastic pelvic floors, unless its exit is precipitate, and we have been able to predict immunity from injury in all these cases of advanced elasticity.^l

The urethral habit has been referred to under "Changes at the urinary meatus."

Social status.—The list includes a relatively small number of women of loose life—not more than 1 per cent. as far as a physician may judge. There is not one professional prostitute among all these. About 4 per cent. have been single but not virgin. The ordinary good-class city practice has furnished these results.^m

Clinical history.—Rare before puberty, the average time of commencement is just afterward and the time of excess is within the next ten years. There are many exceptions to this generalization, as, for instance, the habit developing during a long engagement or in early widowhood. I have seen but ten cases—or one in forty-two—before puberty; of these six antedated the sixth year. Of 38 patients who

^l I take issue flatly with Rohleder,²² who believes that the commoner form of self abuse is "*Scheiden-Onanie*." I find among intelligent women a very strong feeling that virginity is lost if the hymen be stretched or damaged. This prevents them from touching it.

^m Moraglia's results¹⁴, ¹⁵ differ from mine. His observations are from one end of the social and ethical scale, mine from the opposite. Bergh⁸ the Dane, Martineau¹⁸ and Parent-Duchatelet¹⁷ the Frenchmen, draw from a like source as the Italian.

stated the period of beginning, 50 per cent. named the commencement of menstruation.

The danger periods, then, are during the vulvitis of infancy and in the years following puberty. At these times we must be watchful. At these times mothers must know the danger and must instruct their children with care.

The following table shows, not the date of appearance of vulvar hypertrophy, but the age of detection of the hypertrophies, when pelvic distress brought the patient to the gynecologist.

Ages of patients exhibiting well-marked labial and other vulvar hypertrophies.

Less than 1 year old.....	1	} 10 cases before puberty
1 year old.....	1	
2 to 4 years old.....	1	
5 to 9 years old.....	5	
10 to 14 years old.....	2	
15 to 19 years old.....	30 cases.	
20 to 24 years old.....	98 cases.	
25 to 29 years old.....	105 cases.	
30 to 39 years old.....	120 cases.	
40 to 49 years old.....	36 cases.	
50 to 60 years old.....	5 cases, n	

This table is of little value after 25 years, for after that time the accidents of childbirth or marital infection send many women to seek aid. It gives the age at which women are driven to the specialist but incidentally it indicates that immediately following puberty and for ten years thereafter a large number of women (of whom over 70 per cent. were not exposed to the risks of infection of coitus and injuries of labor) who are disabled are subjects of local irritation at an early age. The youngest patient was 10½ months.

Diagnosis.—Under the following circumstances a diagnosis of masturbation may always be safely made, whether there be denial or not:

1. Whenever, in virgins or in women never pregnant, any portion of the labia minora (nympha, prepuce or fourchette) protrudes through the vulvar cleft—particularly if that portion is distinctively wrinkled, thickened or pigmented.
2. Whenever the wrinkling, thickening, pigmentation and accessory labia, one or all, are definitely present in the absence of protrusion.
3. Whenever, in women who have borne children, the labia or any part of them present these characteristic foldings and enlargements.

n. Among Moraglia's¹⁸ 50 Italian harlots 28 began before puberty, 19 between 12 and 14, the most usual period, and that a precocious one, commencing at puberty, the average being the eleventh year.

4. Whenever, in the pregnant woman, the labial signs are notably present. Here, some previous observation is necessary to enable one to be certain.

Occasionally alterations are absent though an avowal is tendered by the patient. These are either mental cases or else the pressure has been applied *via* the closed labia minora. Neither circumstance is of common occurrence. Some instance of a long-continued habit show changes which will not be recognized by an observer until he has learned to know the grosser hypertrophies. The corrugated character may be little marked and the folds may lie in lines too fine to be noted at first, in places where the surfaces should be smooth.

The usual time of indulgence is after or before the period. The trouble is worse when the pelvic disorder is most in evidence and in the spring. The ordinary frequency is two or three times in the immediate neighborhood of the period and once or twice (if at all) between. Months of freedom may elapse. Indulgence by day is as frequent as by night. The extremes or excesses noted have been, first, in infants, with whom the thigh rubbing is at times almost incessant, and second, in the years after puberty, nightly, several times, for a long period, and, last, in the two nymphomaniacs, who wrecked their nerves with impossible excesses. Long-continued and extreme indulgence has, in a few instances, produced no apparent deleterious result. Where statements concerning 12 or 15 times a day are made, the sensation is doubtless feeble.

Mutual masturbation I have heard of very rarely and never among cultivated individuals. Rarely, in the cases here reported is it admitted that the habit has been learned from others. Rarely does it occur in the stout, and then, mostly, the obesity is subsequent to the hypertrophy in date. Rarely will any woman volunteer or admit details. With some it is said to be no more fatiguing than the normal relation: with others it is incomparably more fatiguing. Sexual precocity has not been noted. There are a number of groups of sisters in the series.^o

The *time of appearance of menstruation* is not affected by an antecedent habit. That is, if one may judge from a small number of admitted cases and by the year of puberty as stated by 141 women who

^o. A distinction is to be made between "*Onanie aus Noth*" and "*Onanie aus Leidenschaft*," between relief and indulgence (Dessoir). I have not heard of the boarding-school origin of the habit. Ellis¹⁹ brings together the evidence that finds occasional epidemics in boys' schools, but shows how many schools are free of the vice. Heredity has been dwelt upon by various writers.

bear vulvar hypertrophies, of whom there must be some dating back earlier than puberty. The average age of puberty, in the 141, was $13\frac{5}{7}$ years. The average age for white Americans is 14 years.

Symptoms.—The disabilities complained of in 427 cases were as follows:

Dysmenorrhea in	50 per cent.
Leucorrhea in	24 per cent.
Bladder irritation in	17 per cent.
Menorrhagia in	9 per cent.

Neuroses.—Either masturbation tells heavily on the nervous system or else the neurotic are erotic and the high-strung nervous system is particularly subject to the danger of sexual excess. Here are the figures, showing that to one in four of the cases belongs more or less grave nervous disability. For the sake of clearness small fractional percentages will be omitted:

Neurotic	9 per cent. of 427 patients
Neurasthenia	7 per cent.
Melancholia (insane)....	5 per cent.
Hysteria	$2\frac{1}{2}$ per cent.
Imbecility	$1\frac{1}{2}$ per cent.
Nymphomania	$\frac{1}{2}$ per cent.

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In this list the surprising thing is the small number of women with the overmastering sexual feeling called nymphomania. All of those in the first four classes (neurotic, neurasthenic, melancholic and hysterical) may fairly be classed in the partly or wholly neurasthenic section—that is, nearly 24 per cent. or one-fourth of all the cases of vulvar hypertrophy. This exhibits a very close relationship. Which is the cause and which is the effect I cannot say, except in individual cases.^p

Diseases and displacements.—In my series the following deviations from the normal were found. Comparison might be useful with tables

^p. Ellis says*: "Probably the most important of the comparatively frequent results of solitary self-excitement—though this also arises usually on a somewhat morbid soil—is neurasthenia." "It is possible that neurasthenic persons are especially predisposed to masturbation." Binswanger^a admits that nearly all neurasthenic persons acknowledge masturbation, but considers it not an important cause. Rohleder² lays grave stress on its results. Kraft-Ebing believes it to be a cause of neurasthenia. Savill¹⁸ believes it to be a weighty factor. Collins and Phillip⁸ found 123 cases out of 333 apparently due to overwork and masturbation. Freud says the connection can always be traced. Gattel¹⁴ found among 15 neurasthenic women only one not given to the habit.

showing the average frequency with which these conditions occur in the ordinary run of gynecological practice in private office work in a large city.

In the writer's 427 cases with vulvar hypertrophies there occurred		In Winckel's private practice. 5665 cases.
Endometritis in.....	32 per cent.	12½ to 19 per cent. 8 per cent.
Retroversion in.....	22 per cent.	
Anteflexion in.....	12 per cent.	
Ovaritis and ovarian cysts in	16 per cent.	
Uterine fibroids (no negresses)	5 per cent.	
Tubal diseases were notably infrequent.		

Endometritis, vaginal catarrh and trigonitis seem to me to be the only pelvic diseases which can be directly attributed to masturbation and these only in cases of excessive indulgence.

Effect on fruitfulness.—Of the marriages of women with labial hypertrophies I find, in 173 cases, 61 per cent. had been pregnant. Exclusion of some of the grosser causes for sterility, such as adhesions, diseased tubes, large fibroids, etc., leaves about 30 per cent. of unfruitful marriages. Whether this percentage of sterility runs higher than that found in ordinary gynecological practice, I cannot say. Comparison cannot be made with the ordinary findings that 1 marriage in 10 is without issue, because most of my cases had the diseases and displacements as shown in the last table and these troubles may have made them sterile.

Effect on labor.—Except in a woman who is a neurasthenic wreck and who suffers long labor through uterine inertia or who has a rigid cervix (chronic endometritis) the effect of self-massage of the pelvic floor on delivery is beneficial—at least this is true in the second stage in two classes of cases: (a) those subject to the vulvar habit who bear a corrugated fourchette or perineum in conjunction with much-enlarged nymphæ, whether the hymen be intact or not, and (b) the subjects of the vaginal habit whether there be any vulvar hypertrophies or not.

Effect on the normal relation.—Complete apathy (in 36 cases) or downright disgust for the sex act (in 15 cases) constitutes an active complaint of 10 per cent. of the married patients. The lack of feeling is in direct proportion to the previous excesses. It is most certain to be present in patients presenting evidence of the vaginal habit.

Let it be clearly understood that in a very large proportion of the

instances of masturbation in women the matter is a physical rather than a sexual one. By this is meant that sensual images and desires are infinitely less often consciously associated with the practice in women than in men. The distinction applies particularly to the intelligent classes. Among refined and delicate women, the pent-up sex hunger may take this outlet without recognition of the real meaning of the impulse. Among emotional or emotionally religious women the tendency is strong. Aversion to men is not uncommon. Revulsion of feeling after marriage is partly due to an exhaustion of capital or store of capacity for sexual gratification; but oftener, perhaps, to lack of bent or desire toward any male caress.^g

The whole subject is one on which information is difficult to obtain, for physician and patient are loath to approach the matter. Indeed, approach to the subject and retreat from it are equally difficult. To women physicians women confide this trouble far more freely than they ever can to men.

The second part of this paper will deal with treatment, both general and local, including reports of permanent anesthesia of the vulva by section of the pudic nerve in the imbecile and hysterio-oöphorectomy in nymphomania. When published in reprint or in my book it may be deemed admissible to add illustrations in greater number, drawn as diagrammatically as is compatible with clearness.

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^g. "In many cases it has seemed to me that masturbation, when practiced in excess before the age of puberty, has led, more especially in women, to an aversion for normal coitus in later life. In such cases some peripheral irritation or abnormal mental stimulus trains the physical sexual organs to respond to an appeal which has nothing whatever to do with the fascination normally exerted by the opposite sex. At puberty, however, the claim of passion and the real charm of sex begins to make itself felt, but, owing to the physical sexual feelings having been trained into a foreign channel, these new and more normal sex associations remain of a purely ideal and emotional character, without the strong sensual impulses by which under healthy conditions they tend to be more and more associated as puberty passes on into adolescence or mature adult life. I am fairly certain that in many women, often highly intellectual women, the precocious excess in masturbation has been a main cause, not necessarily the sole efficient cause, in producing a divorce in later life between the physical sensuous impulses and the ideal emotion. The sensuous impulse having been evolved and perverted before the manifestation of the higher emotion, the two groups of feelings have become divorced for the whole of life. This is a common source of much personal misery and family unhappiness, though at the same time the clash of contending impulses may lead to a high development of moral character" (Havelock Ellis¹⁰).

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