

**BICYCLING FOR WOMEN FROM THE STANDPOINT OF
THE GYNECOLOGIST.¹**

BY

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(With eight illustrations.)

IN France and in Chicago the number of women who ride bicycles is said to be large; in Brooklyn their numbers are increasing rapidly, and the exercise, in a contagious form, is

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reported to be spreading even in New York. The question comes to us constantly as to the healthfulness and desirability of the bicycle for women. As far as the literature in our department goes, there has been no published opinion yet. It is important, therefore, that we should be able to give out, if not a definite and conclusive answer, at least a provisional one.

Among that most difficult class of questions which present themselves daily—the regulation of the daily lives of our mild or chronic cases—one may safely say that there is no problem which bothers us more than the prescription for exercise. It would be ridiculous, if it were not pitiable, to note how limited is woman's chance for physical development outside of her household duties. For instance, in the Greater New York I believe there is no opportunity for a woman to take a swim in the cooler months except in a poor little tank of very cold water in the cellar of a Turkish bath. The inheritance of false habits—house habits, dress habits, nerve habits, and work habits—has brought it about that the demand for exercise facilities is small. It is supposed to be sufficient outdoor exercise for the sister to wave her handkerchief from the grand stand. It is this limitation of her scope that is the real cause of the good woman's doubting question why God intended women to suffer during menstruation and labor—processes normal and therefore normally painless. So early do these false habits cripple a girl that Dr. Pettit, Director of Physical Culture in the Adelphi Academy in Brooklyn, states that the older girls cannot compete in any way with the younger; and as one example of the difference it may be said that the girls of 14 can jump one foot higher than those of 18. So unused is the average woman to exercise that muscle work for its own sake presents none of the delight and after-glow which man usually gets from it. To her the gymnasium often means dull routine, as our schoolboy calisthenics did, though sword practice and fencing, the Highland jig, and high kicking be part of the sport; the bowling alley means broken corset bones under one-sided, sudden strain; dancing is done in a bad atmosphere, in wrong dress, during sleep hours; and horseback riding, especially at a trot or with the close seat, is a jouncing of the pelvic organs, with their supports stretched taut by the snug corset that the tailor-made *basque* demands. Only the summer presents loopholes, and through swimming and lawn tennis, climbing, sailing, and row-

ing, is found development of muscular energy whereby, in the absence of ill-judged enthusiasm and overtire, much good may be accomplished.

The horse versus the bicycle.—Bicycle-riding has certain advantages over the present style of horseback-riding. The fashionable contorted seat does not develop the body symmetrically, and the awkwardness, due to the fact that the transverse

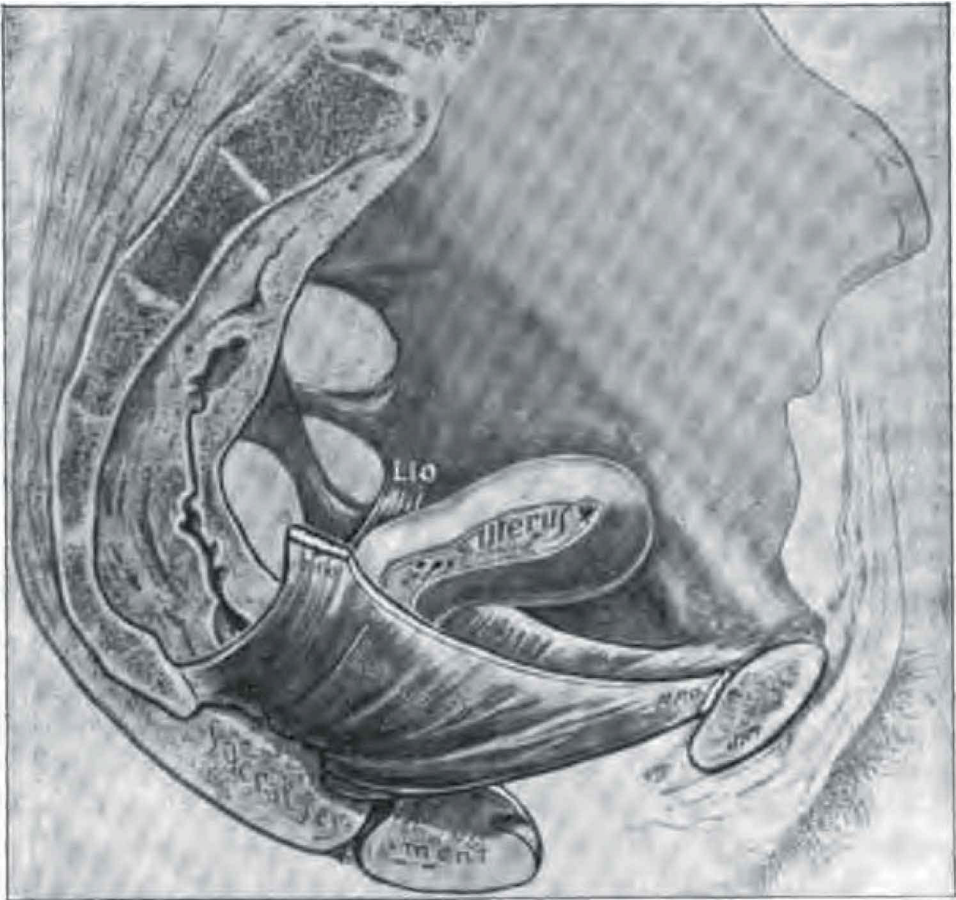


FIG. 1.—A side view of the largest muscle that holds up the pelvic contents, the levator ani, with the uterus in its hammock-like sweep. Semi-diagrammatic. R P O, right pubic origin; L P O, left pubic origin; R I O and L I O, right and left ischial origins.

diameter of the pelvis and the transverse diameter of the upper trunk do not correspond, means strain, to say nothing of the useless effort a trotting gait entails. When women get into the habit of riding part of the time with the stirrup on the right side and part with the stirrup on the left, one objection to the spinal rotation and the unsymmetrical development will be over-

come; and it is to be presumed that eventually they will all ride astride as their great-grandmothers did before the days of Elizabeth. The expense precludes this form of exercise for most women. Cheapness, safety, accessibility, and the small amount of preparation required are all on the side of the wheel, and hold good to an even greater degree for the woman than for the man. I myself am a converted horseman.

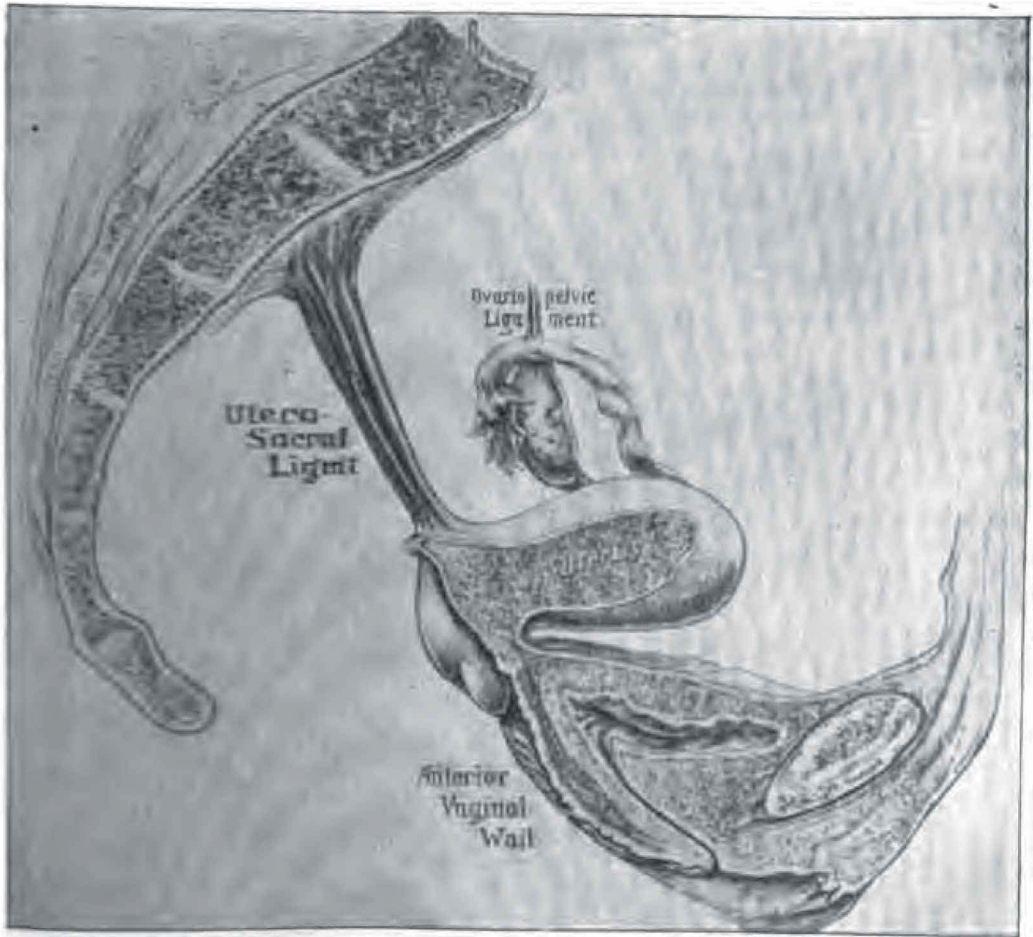


FIG. 2.—A side view of the way the uterus is swung between two bony points, as an indication of the importance of muscular vigor in the utero-sacral ligaments. From a frozen section.

The sewing machine and the bicycle.—The question has been often asked how it is that we will advise women to ride a wheel while a strong stand has been taken against the sewing machine on account of the harm it may do to the pelvic organs. It seems to me that the conditions under which the two forms of leg exercise are taken vary radically. A woman at the sewing

machine must stoop to focus her eyes accurately on the point at which the needle is at work, and must drive the material along in accurate lines under the rapidly moving needle, within the margin of one-sixteenth of an inch. Such a position in the corseted woman brings a strong pressure to bear on the pelvic

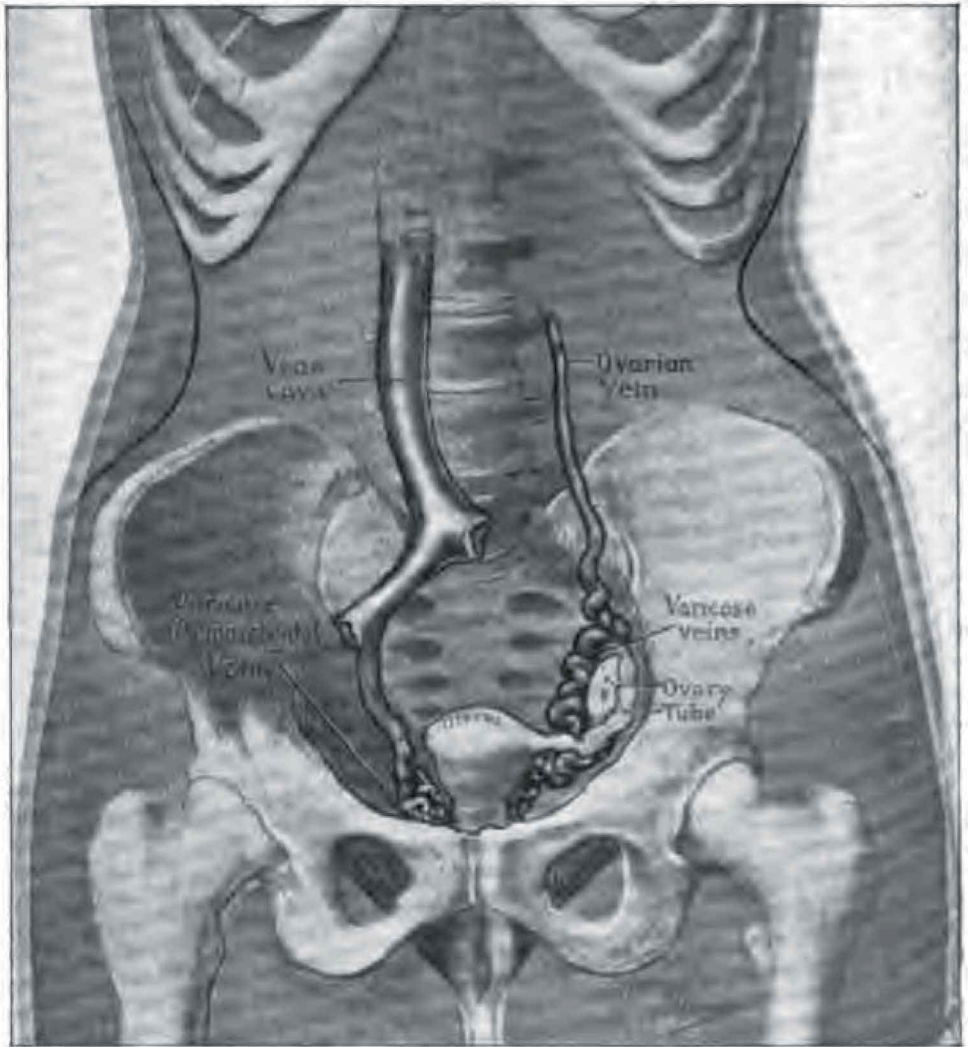


FIG. 3.—The valveless veins, with the varicose conditions that may ensue from strain during waist constriction. The veins are from a dissection by Ruedinger, the rest from Stratz.

contents by means of the lower part of the busks, or metal front pieces on the corsets, at a time when her pelvic inclination is lessened, while it permits increased abdominal pressure to act on her pelvic cavity directly from above. Now, with this increased intra-abdominal and pelvic pressure, in the presence of waist

constriction that forcibly dams back the blood in ovarian and hemorrhoidal—veins that are valveless and that empty themselves in the area of maximum pressure—her active leg muscles are pumping an increased supply of blood into the iliacs and lower vena cava; then during this venous congestion we find the psoas muscles, against the lower and inner edges of which the ovaries and tubes lie, working more or less vigorously. In addition to this the action of the limb is distinctly a constrained one, and somewhat resembles the tension on the whole lower leg in working the pedals of an organ, but without the free and compensating body balancing that the arm work of playing the organ necessitates. And, lastly, the indoor motion is a series of



FIG. 4.—Girl bending forward at work, with pelvic inlet nearly level, and pressure from the corset steels gaining free access to the pelvic organs.

very short excursions in rapid succession, while the road machine calls for a full, slow sweep of the whole leg—the difference between jerking and swinging.

If a woman rides a bicycle, stooping well forward while dressed in a snug corset, with her saddle rather far back so as to be obliged to thrust forward on her pedals rather than to walk up and down on them, and with a very low gearing, we have conditions somewhat analogous to those under which she plays on the sewing machine; but should she wear loose body clothing and sit upright, so that her weight is borne largely on her tuberosities, with a level saddle placed fairly well forward, the thrust is chiefly downward, the increased intra-abdominal pres-

sure is lacking, the leg work is very different from that on the other machine, and all the objectionable features are eliminated except the liability to excessive indulgence.

On the circulation what will be the effect?—It will be that of any general exercise plus specialized supply and return flow of blood to the parts that do most of the work—namely, the leg muscles. Therefore the pelvis will undoubtedly be subjected to a much increased rapidity of circulation; the pelvic vessels with their muscular coats, the pelvic muscles which are taking part in the general tension, the whole of the pelvic floor and the organs above it, all will receive a well-defined stimulus, and by degrees a permanently increased tone, from regulated riding. I

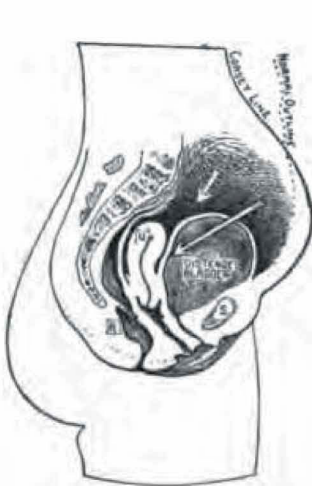


FIG. 5.



FIG. 6.

FIG. 5.—Conditions favoring retroversion: the full bladder with increase in the pressure from above that is produced by any waist-narrowing device, and which does particular harm during effort.

FIG. 6.—Conditions favoring anteversion: the effect of the pressure on the lower abdomen in bending the uterus forward when the bladder is empty.

speak whereof I do know, and I have but to point to the cases where a flabby and relaxed condition rapidly rallied under this influence.

I have no striking cases and no large number of them to present; the subject is too new. I am simply writing an introduction to the study of it.

What attractions has the bicycle for women?—It is an outdoor exercise, necessarily. It is, after the first shyness from conspicuousness of position and garb has worn away, in itself an alluring form of exercise, with the exhilarating elements of speed

in motion, companionship, competition, and exploration of unknown roads in park or neighboring country. It furnishes the wife a means of comradeship in exercise with her husband.

In it we seem to have found at last a form of outdoor muscle work which attracts women and entices them to many hours in the open air. It possesses all the advantages of walking or climbing, with the additional advantages of the shake-up of



FIG. 7.—Ruedinger's frozen section with all structures and tissues removed except muscle (and the bones), to show that muscular tissue will give us a sketch of all the important parts. Uterus, bladder, rectum, vagina, urethra are hollow muscular organs or tubes.

horseback, or of one of Dr. Taylor's machines, the body-balancing of canoeing, some of the swing of skating, and a sample of what flying will be like. It exercises a large number of muscles—far more than any one who has never tried it supposes. Ask the beginner how much body balance there is about it, or the expert who steers without touching the handles. Ask the woman who sits upright, holding tightly to her handle bars as she

works up a grade, how much arm and shoulder pull there is in it. Ask the woman who knows how to pedal properly whether all the muscles of her legs are not tired.

I am sure you will agree with me that unless the muscular tone of the pelvic organs is improved we cannot expect our chronic catarrhs and varicose vessels and hypersensitive local nerves to show any improvement. Personally I believe that in all the milder degrees of chronic pelvic disorder, such as do not call for operative interference, rightly regulated exercise constitutes one of our best if not our chief resource, and we all know that this resource has been very little used. When I see

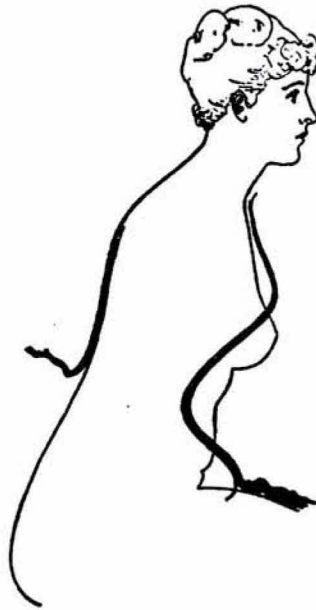


FIG. 8.—Two tracings from the same patient, with and without a loose corset.

a young girl with a well-marked anteflexion, tender and somewhat enlarged ovaries, and considerable cervical endometritis, suffering very severely each month, so that she is confined to her bed for three or four days and vomiting and pale during the first few hours—when I see such a case rapidly relieved by judicious muscular work, though the condition returns at first whenever she drops her exercises; and when I see this condition of things not once but many times, I am constrained to believe we neglect the best means, although we may cure her by long-continued local applications, or galvanism, or dilatation, or curetting.

It seems to me probable that there is no single exercise that will so efficiently develop muscular tone in the pelvic floor as

this. Two cases of hopelessly relaxed pelvic floors, which neither faithful Swedish movements nor restoration by plastic operation would prevent from sagging, and which I finally felt constrained to believe must be irremediably injured by atrophy as the result of pressure during labor, have remarkably improved in tone from a few months' riding. It is hardly necessary to draw your attention to the difference in the position of the organs within the pelvis when, in the presence of a badly torn perineum, the levator ani is vigorous or relaxed. In one case the anus is drawn far forward toward the subpubic arch and there is no prolapse; in the second case, even though the perineal body be uninjured, the sagging of the sacral segment and the distance between the posterior commissure and the subpubic arch readily permit hernia of the organs within. It is possible, too, that the relief to the hemorrhoidal condition which a judicious use of the bicycle brings about is due, not only to the local massage, but to the improved tone of the muscular coat extending up the bowel from the anus.

Sexual Excitement.—A very grave objection has been made to the use of the bicycle among women, which, if true, would induce us to be exceedingly cautious in ever suggesting this exercise. It has been said to beget or foster the habit of masturbation. One of the very able women who teach physical culture in New York told a medical friend of mine that a pupil, who claimed a rather varied experience in sexual pleasures, said that she could not ask a more satisfactory development than could be obtained from the saddle of her bicycle. Dr. Vance has observed a case of an overwrought, pallid, somewhat emaciated girl of 15, whose saddle was arranged so that the front pommel rode upward at an angle of about 35°, who stooped forward noticeably in riding, and whose actions, during the time when he had good opportunity to observe her, strongly suggested to him the indulgence we are considering.

I have had a thorough search made in the literature, but can find no cases bearing on this subject. It is perfectly conceivable that under certain conditions the bicycle saddle could both engender and propagate this horrible habit. The saddle can be tilted in every bicycle as desired, and the springs of the saddle can be so adjusted as to stiffen or relax the leather triangle. In this way a girl such as the one mentioned could, by carrying the front peak or pommel high, or by relaxing the stretched leather

in order to let it form a deep, hammock-like concavity which would fit itself snugly over the entire vulva and reach up in front, bring about constant friction over the clitoris and labia. This pressure would be much increased by stooping forward, and the warmth generated from vigorous exercise might further increase the feeling. But if the rider sits upright and has her saddle moderately taut and fairly level, the weight rests upon the buttocks and but trifling pressure is brought anywhere upon the vulva as the legs swing well apart. Moreover, there is anatomical reason to believe that right posture will diminish erotic tendency; the general effect on man is such, and this is probably due to the numbness from the pounding his *nervi erigentes* get. The woman's pudic nerve is readily caught—in case, during vaginal examination, she shows suspicious signs—by the finger in the vagina pressed outward toward the ischial rami, and any feeling quenched. This massage the saddle also effects. Patients of whom one can ask these questions and trust for a complete answer are few and far between, and therefore I present few statements on this subject. These witnesses, with one exception, testify against sexual excitation, though one of them admits freely that she was formerly in the habit of relieving herself manually. Our Continental confrères, whose patients speak frankly in matters of sexual feeling, will have to give us clinical information on this subject. I believe that there is very slight danger of the habit being started or fostered with the precautions I have mentioned.¹

The importance of right dressing in bicycling.—Nearly all the objections to the use of the wheel made by medical men involve the supposition that whatever jouncing and straining the pelvic contents are subjected to must necessarily be under a snug corset and with the woman bending forward. It has been stated that these are distinctly hurtful conditions, and under these conditions our patients must understand clearly that they are running risks, although there is no doubt that many women take the exercise thus and not only suffer no harm but get benefit.

We must therefore instruct our patients that certain modifications of their dress are necessary. To direct that the corset

¹ In the discussion several gentlemen emphasized freedom from this danger from their patients' experience, and it was reported to them that any pressure sufficient to bring the sensation gave pain.

be taken off merely leaves a narrow girdle of pressure from numerous waistbands instead of the former distributed pressure, does as much physical harm as it does good, and insures an uncomely figure. To replace a corset by a health waist or corset waist, leaving the waistbands as before or the basque of the former girth, is to make an improvement of relatively small value, although thereby the most harmful factor in the corset, the rigid front steels, will have been banished. To advocate a health waist with larger measurement for the body girth of the dress is a long sweep in advance, and one to which we must often resort in that class of cases in whom the trunk muscles are so flabby that the removal of the corset insures a more or less constant backache. In some patients it is as far as we can succeed in going, but my own studies, detailed before the American Gynecological Society two years ago, have convinced me that the health waist should not be countenanced except as a temporary expedient where the breasts are large or flabby. A breast support hung from the shoulders overcomes this objection. The Delsarte girdle or strophium may be mentioned as one of three or four good models.

The woman on a bicycle is at an advantage as compared with the woman on horseback, as custom does not enforce the tailor-made, hour-glass, shop-window figure, and she can wear a jacket open in front with a shirt waist beneath it.

The best and simplest form of dress from the hygienic standpoint—and it may be said also from the æsthetic standpoint, if we are to judge by the strikingly beautiful costumes which are said to be common in the streets of Paris and exceedingly rare here—the best and simplest costume is made up of: First, a union garment, which is a combination of undershirt and drawers in one piece, whereby the pressure and the ridge caused by the band of the ordinary drawers are done away with. The drawers are no longer hung on the waist line, overlapping the lower end of the undershirt is avoided, with the consequent double thickness of material at a part of the body where bulk is especially unsightly. Second, shoes, stockings, and a short pair of equestrian tights from knee to waist, and a pair of leggings buttoned up the side of the leg to meet the equestrian tights above the knee. This prevents any objectionable exposure of the leg from the skirt blowing up. Third, a male costume, with as much or as little fulness or length to the trousers or bloomers as the rider may elect. There can be no

doubt that eventually this will be the costume in which women will ride. It will be only a matter of time until the woman astride on horseback and the woman in knickerbockers a wheel will be taken as much a matter of course as is the accepted bathing costume. Or, third, instead of trousers, a shortened skirt. This suit may be skirt and jacket, or in one piece (as ulster or princesse), with fulness in the front and rear instead of sides. It is advisable to line the skirt with silk or satin, that the knee may slip easily against it, and the cloth should be heavy enough to withstand blowing by the wind.

CASE I.—A neurotic patient with membranous dysmenorrhea and some cervical catarrh, who suffers incessantly from a moderate backache, is freed from the backache for a time after each bicycle ride, and her nervous balance is markedly improved after each ride, while exercise, with her, always means smaller or absent membrane.

CASE II.—A patient suffering mildly from melancholia, who has had dysmenorrhea, leucorrhœa, backache, and sufficient discomfort to prevent her from assuming the household control for her husband and her boy; wakeful, agitated, constipated, and with a small appetite, cold hands and feet, came under my care for laceration of the cervix and perineum. Both were repaired, with a handsome result, and she was faithful in a course of Swedish movements designed to give tone to her utterly relaxed pelvic floor. Notwithstanding the architectural improvement her catarrhs continued. Two months of wheeling have cured them and have given power to her levator, that I began to fear must be hopelessly incapacitated by atrophy following some injuries during labor which examination could not detect.

CASE III. is that of a patient with very much the same condition, except that her nervous system was steadier and she was somewhat obese.

CASE IV.—A nullipara with an old retroversion, which is comfortably held in normal position by a pessary; does not regain sufficient tonicity to the supports to do without the ring. Riding is giving what previous months of activity did not, and during her rides the hard-rubber Smith pessary never makes its presence known.

CASES V. and VI. are practically the same, for the wheel is especially adapted to such.

CASE VII.—A young woman, originally robust, over-anxious

about her children, and the house imprisonment thereon consequent, with a life habit of waist constriction which developed the usual atrophies about the trunk, active and otherwise well built, but complaining of constant backache, was suffering from membranous dysmenorrhea with relaxed uterine supports and retroversion. An operation had no effect in removing the causes, and treatment, therefore, none in diminishing the distresses. The use of the wheel, however, promises already large results, both locally and generally.

CASE VIII.—This patient had frequent attacks of posterior parametritis and is of fragile build. The exercise on a light wheel on good roads is so easy that she has steadily gained, has overcome her constipation (an important argument for the wheel), and has gone long without a relapse.

Summary.—Under proper conditions of costume and posture, with care that the exercise be gradually increased and properly graded for the individual case, and where there is no acute inflammation to contraindicate it, bicycling will probably show itself capable of large results as an agent in curing pelvic disorders, since it is one of the few exercises which attract women.

In view of women's disabilities, and the disadvantages under which she has suffered in attempts to obtain interesting and beneficial muscular exercise, it seems hardly too much to say that the promise from the bicycle is far-reaching. Through it and the habits it will engender we look for better dress, freer dress, shorter dress in bad weather; for better exercise, for out-of-door activity, for steadier nerves, stronger muscles, painless periods, easy labors.

DR. ROBERT L. DICKINSON read a paper on

BICYCLING FOR WOMEN FROM THE STANDPOINT OF THE
GYNECOLOGIST.¹

DR. H. S. PETTIT, of Brooklyn (present by invitation), said he had been interested in physical culture five years as associate medical director with Dr. Savage, and had observed that up to 10 years of age girls could compete favorably with boys, but after the fourteenth or fifteenth year, when they began to lengthen their dresses and to wear corsets, they were unable to go through exercises which were of much value. The restraint of dress was such that they could not raise the arms over the head, could not bend nor walk with freedom. In placing girls in classes it was found that beginners under 14 could do much better work than those of 18—for instance, they could jump a foot higher. He had no doubt that bicycle-riding was one of the best outdoor exercises. The bicycle was cheap, was easy to keep, the motion was rapid, and women found that for ease it was necessary to discard the strait costume. He recommended the sweater with bloomer dress.

DR. HERMAN L. COLLYER firmly believed, with the author, that women should exercise, and begin at an early age. It was, however, rather soon to determine what particular injuries might result from bicycle-riding. That portion of instruction or training relating to exercise was sadly neglected, among boys as well as among girls, and was probably due largely, among girls, to teaching them at an early age to cast away childish habits and be ladylike. Dancing and horseback-riding were about the only forms of exercise permitted them. The latter was too expensive to be utilized to any extent, and was practised in a disadvantageous form on the side saddle. Lately, however, he had seen some women in the Park riding astride the horse, with divided skirts, and he thought the style was very becoming as well as physiological. If women wished to be esthetic in appearance they could be so, no matter what exercise they took; on the other hand, if they wished to look vulgar, they could look so on the horse or bicycle or under any other conditions.

¹ See original article, p. 24.

As to inducing bad habits by riding the bicycle, he would say that if a girl wanted to masturbate she would carry out her wish any way, as well sitting on a chair as on a bicycle. He thought exercise on a bicycle would tend to prevent masturbation, even in those predisposed to it, for the reason that a convenient opportunity was not afforded and attention was taken from the pelvic organs.

He thought he had seen some tendency to congestion of the hemorrhoidal vessels where riding was indulged in too long at a time, and that young riders were apt to overdo the matter and induce injury of the muscles, especially of the back and the heart. But judicious riding on the wheel was an excellent exercise. Those who wished to enjoy it, men or women, would have to discard tight apparel.

Dr. Collyer was strenuous on the point that bicycle-riding did not tend toward the habit of masturbation, for the reason that when the saddle was in a position to touch the clitoris riding became uncomfortable.

DR. H. C. COE had hoped that the author would say something about the effect of bicycle-riding on uterine troubles, especially displacements, as well as upon the pelvic floor. He had recently been interested in two cases of displacement in women who took up bicycle-riding, not with his advice, but of their own accord, and they had improved under it. One patient, who had an extensive laceration of the cervix and pelvic floor, continued to ride until within a short time of her operation, and resumed it not long after her convalescence.

DR. CLEMENT CLEVELAND said that bicycle-riding was such a hobby with him that he feared he was not an unprejudiced judge of its advantages or disadvantages. He had listened to the reading of Dr. Dickinson's paper with the greatest delight, because he appeared to be as enthusiastic upon the subject as himself. The difficulty lay chiefly in learning to ride. Women should be taught in some retired place, if they would gain confidence quickly and avoid the accidents which might occur in crowded streets. It was very well for us to discuss theoretically the influence of bicycle-riding, but present indications seemed to point to our having abundant evidence of its effects, whatever they might prove to be; for the coming woman, he believed, would ride the wheel.

Its use was not to be compared with that of the sewing machine. It is true he had seen some women sit on the bicycle as they would at a sewing machine, but that was not the proper position. The correct way was to sit erect, limbs nearly straight. Moreover, it was not an hour or an hour and a half sitting at a sewing machine which did the harm, but rather the use of it from early morn till dewy eve.

The best form of saddle had yet to be invented for women,

but he believed it would come. Corsets, he believed, should not be worn.

He was entirely in accord with Dr. Dickinson, and believed the bicycle was destined to be of inestimable advantage to women.

If there was any objection to its use it applied more forcibly to men than to women. He had recommended it to a number of patients with good results. One very great benefit would come from its use: the cure of constipation. Many women had told him that it had relieved them entirely.

With regard to menstrual disorders, his observation had been that it regulated rather than disturbed that function. The great trouble was likely to come from overdoing the exercise. If women would ride moderately and not attempt to travel fifty or sixty miles a day, if they would remain in the saddle about an hour and a half and not go further than fifteen or twenty miles, he believed it would result in nothing but benefit.

DR. GRAEME M. HAMMOND (present by invitation) said he had come to be instructed as to what were the effects of bicycle-riding on women. Although neurologists were supposed to know nothing of the internal organs of the female, yet he had given some study to the influence of this form of exercise upon the general health of women and upon their nervous systems. He agreed with the author with regard to the advisability of a reform in dress, but could not agree with him that bicycle-riding was likely to cause irritation of the genital organs. He had had a woman try the saddle in all manner of positions, and while it was found that it could be so arranged as to cause friction of the labia, yet the rider was so uncomfortable in this position that she was obliged to stop and reset the saddle.

The only case of abnormal condition of the uterus attributable in any way to bicycle-riding, and known to him, occurred in a nervous, delicate woman who, while riding rapidly, struck a large stone. She was thrown, and next day had what a physician who examined her described to him as anterior displacement, which, it was claimed, had not existed previously.

The effect of bicycle-riding on children ought to be studied, for they were yet undeveloped, and he thought excessive riding by them might induce abnormal conditions of the heart. In the adult he had made extensive examinations to determine the effect upon the lungs and heart, and had found in those who had ridden a number of years an increase of the chest expansion of one inch above the average. The usual expansion in women, not forced expansion, being three-quarters of an inch, we might expect continued bicycle-riding to increase this considerably. The effect upon the heart had been a physiological hypertrophy, so that the apex was felt in the nipple line, not to the right of it. There was no dilatation. An exercise which had the effect of increasing the breathing capacity and increasing the

strength of the heart was certainly a desirable form. He believed that as statistics should come to be tabulated bicycle-riding would be found to have a very important influence upon the future development of women.

DR. W. GILL WYLIE believed, with those who had preceded him, in the bicycle. He had himself learned two years ago, two of his growing daughters had been riding, and he was convinced they had all been benefited by the exercise. It was, in his opinion, only a form of exercise, and destined to have no influence on the pelvic organs different from that produced by any other healthful exercise. He thought the influence of falls and of special kinds of labor in the production of displacements, etc., had been greatly exaggerated. He had more respect for the way in which the uterus had been placed in woman than to think that a fall, even from a bicycle striking against a stone, would cause anteversion or retroversion, unless some complication already existed which favored displacement.

As Dr. Cleveland had remarked, it was important to have a good saddle. He had heard women complain of the saddle pinching them about the vulva, but he did not believe it would induce masturbation. If so, the saddle must be changed.

The main point was to keep girls out of doors, cause them to exercise in the open air after the twelfth year as well as before, and thus favor healthy development. The most important time of woman's life for physical development was about the fifteenth year, and it was most important not to allow her to use up all her vitality in feeding the brain while suppressing development of the body, especially the pelvic organs, by indoor life and constrained dress. If girls were induced to take out-of-door exercise they might be given a little force or vitality for the normal development of the generative organs. The tendency of civilization of recent years had been more and more toward suppression of the uterus. Unless at the age of puberty girls were given more force than was needed for muscular and brain use, the uterus could hardly be expected to develop at all, while dysmenorrhea, leucorrhœa, lacerations, and displacements could be confidently expected. If the bicycle would cause girls to go out and compete, like boys and colts, in open-air exercise, it would do good. By improving the general condition it would act toward relieving special conditions, but not directly.

DR. MALCOLM McLEAN had personally used the bicycle since it first came out, and, having also put it into use by his family and by many patients, he could speak practically about it. We should insist upon the use of horizontal bars, or such as permitted of the upright position. The saddle should be a long one, whereas the universal custom of makers at present was to place a short saddle on a woman's wheel. The short saddle necessitated the front part to strike the vulva, while with the long one, sufficiently tense, this was not possible. Many girls

and women did not take kindly to bloomers, and he had found that their use was not really necessary to comfortable riding. On inquiry a lady rider had told him that she had no difficulty from her dress getting caught in the wheel; that the only trouble came from the tendency of the knee motion to work it to one side and upward; and that if he could devise some way of overcoming that, women would not require divided skirts or bloomers. Acting on this suggestion, he had measured the distance from one foot to the other along the hem of the skirt, with the woman in the standing position ready to "mount," had had a button sewed to the inside of the skirt opposite each foot, and, by means of ordinary elastic straps passing around the ankles and buttoned to these buttons, had stopped all tendency of the skirt to work to one side or become otherwise displaced, gave comfort in riding perhaps equal to that of bloomers, and did not interfere with walking.

Dr. McLean thought that in many cases of uterine displacement due to lack of tonicity bicycle-riding was of marked benefit. He would not say that it was simply the wheel which effected the cure or improvement; it was rather the taking of exercise and being in open air and sunshine. Regarding the influence of riding the bicycle on pelvic inflammations, he had attended the wife of a physician during an attack of pelvic peritonitis; and when she was only so far convalescent as to be able to walk down one flight of stairs with the aid of an assistant, he advised exercise in the sunshine, and as she could not walk it was with some misgivings that they placed her on the bicycle. She had had chronic cystitis, and a bad prognosis had been confirmed by Dr. Skene. When she took her first ride the pelvis was full of exudate and was so sensitive as to scarcely admit of examination. The result had been steady improvement, and the woman was in a few weeks able to ride a distance of twenty miles a day. To him the case was a valuable one, as showing that convalescence and cure could go on without such confinement as deprived the patient of the wholesome influence of exercise in open air. He did not, however, recommend bicycling in diseases of this gravity, and the case related would not have been used as a test case had not the patient been under the immediate and constant care of himself and her husband while riding, thus avoiding any injudicious exertion.

Dr. McLean had had some bad cases of chorea greatly benefited by the bicycle.

Dr. Dickinson, in some concluding remarks, referred to the diagrams which showed the uterine supports and ligaments, and said that he knew of cases of moderate retroversion of the uterus in which, during lack of tonicity of the pelvic organs and general muscular system, so much trouble arose as to suggest the Alexander-Adams operation or ventral fixation. Healthful exer-

cise had so improved the muscular tone in these cases as to make unnecessary operative interference.

The speaker had not said that women could not get benefit from the wheel in bad costume, but he had tried to show that much more benefit would be obtained in the way of muscular tone and improved circulation with right dress.
