This brings us to the question of physiology. In all these cases, rich or poor, we must regulate diet above all other things. Medication also sometimes will be required, but comparatively little. The various gymnastic sports should be encouraged, but regulated by the physician. This is the only way we are able to reach some people and make them take the necessary exercises. The one trouble with most of these are that they are lopsided, will develop only certain parts of certain muscles and parts of the body, while it is so essential to have a systematic and symmetrical development of the body. We are not always able to reach our ideals with stubborn and selfish patients, but we must do the best we can and always strive for it.

Trying, therefore, to guide the young girl to strong and vigorous motherhood, it is not necessary to pay any attention to the menstrual function. That will come without trouble unless there are organic defects and changes which will have to be looked after and remedied, but that does not concern us here.

If we now consider the mental development we have the greatest difficulty. If their physical weaknesses are marked, the mental training should cease or be checked. In this we will have comparatively little trouble. The rich will be willing to do so because they seem nearly always anxious to stop their studies or postpone them on the slightest provocation. This holds good especially with the so-called shoddy. With the poor and the middle classes we shall have our greatest trouble. If the young girl has been animated by ambition to be something in the future, to be able to support herself, and perhaps often to assist her parents and younger brothers or sisters, we will have a very difficult task if such a person is physically weak. If we allow her to go on with her mental work her physical condition will probably become still worse. She is liable to have an undeveloped uterus and conditions of the system produced by it; poorly developed lungs, weak heart and arteries, flabby muscles, feeble digestion, malnutrition of the nervous system and final collapse. The latter sometimes they will become when the goal is reached for which they struggle: the diploma, the teacher's certificate or whatever it may be. She has a mind educated for requirements of that position, and a body feeble and weak, and if she marries she will be a burden to the poor husband, in fact ultimately will probably be divorced or a subject to a series of operations, which will be done to remedy her defects.

One of the greatest difficulties is that these people learn with difficulty. They have not the right kind of brains; they have to study hard until late at night to get their lessons. This intensifies and hastens the physical downfall. Such persons should stop mental work for a year or two and do some other kind of work. When the body is more developed they can resume their mental efforts. They often object to this, but we can manage them all right if we insist on it. People with the right kind of brains and quick perception can continue studies and with a proper amount of physical training they will get along all right.

The question of age in all these cases cuts no figure in my opinion. Either mentally or physically some girls are further advanced at 12 than others at 18.

In conclusion, let me say that hygiene of young girls is one of the most difficult problems for the gynecologist to solve. There are no mathematical problems, no rule that is even elastic within a certain limit, but every case almost is absolutely distinct and requires to be studied by itself. The hereditary predisposition, the surroundings, the future course, the position in life, the means at

their disposition, the development of the different parts of the body, or the lack of development of certain parts, the assimilation and elimination of the various organs, the brain and the kind of brain, how it should be developed in one direction or another, and a thousand and one things must be considered in each individual case. Added to this there must be that fine tact and that absolute control over individuals, so that we can not only manage the young patient, but also those around her, be it the mother, father, sister, cousin or aunt. We must get them all under our control ere we can expect to accomplish anything.

We are able to teach the students but very little. We can give them a few hints, but the cases are so diverse and complicated that every medical man must work out each case for himself.

PELVIC DISEASES IN YOUNG GIRLS.*

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The popular prejudice against examination of the genital and pelvic structures in young girls is not confined to the laity, but, unfortunately, exists in the minds of many of the medical profession. There can be no question that on this altar of prejudice many otherwise useful lives have been sacrificed. The voice of this Section raised in protest will bring fruitage in healthier women, happier wives and more devoted mothers.

First.—The young have, with those older, an equal right to relief from suffering and an equal right to protection from diseases which destroy their usefulness and may endanger life.

Second.—Many, if not all, diseases of the pelvic structures are, in their incipency, curable without recourse to operations which sacrifice important organs or parts.

Third.—Delay in recognition of, or correction of even the simpler conditions, such as displacement of the uterus or ovaries, may, and too often does, result in such organic change as permanently to destroy all function and render the patient an invalid, forever sterile.

Fourth.—The symptoms, pelvic pain, menstrual pain, menstrual irregularity, neurotic explosions, digestive disturbances, etc., occurring preceding, during or following the menstrual effort are only warnings and strong hints for us to seek the cause.

Fifth.—That the pelvic conditions of the young girl can be discovered by feeling the pulse, examining the tongue, and looking wise is no more true than it is in older persons.

Sixth.—A certain amount of modesty and respect for traditional sentiment is probably a protection to the sacredness of woman's chastity, but a chaste life is no way incompatible with an honest purpose in dealing with diseased conditions, and no man will, by an honest, clean, manly effort to discover the cause of suffering, excite impure or degrading thoughts.

Seventh.—We must remember that not only the physical, but the social, the domestic, and even the moral, life of the patient is involved in this question. She may, because of our neglect to ascertain the condition,

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be rendered hopelessly sterile, and, consequently, that unhappiest of human beings, a childless wife.

Eighth.—Our first duty, then, should be the protection of the physical temple of those entrusted to our care. A sound physical organism is, I take it, the surest protection against moral degradation.

Symptomatology is sometimes very misleading, inasmuch as the entire history and symptom-complex, as gathered from patient or her mother, direct attention entirely to the nervous system, circulatory system, or digestive tract with the single exception that the disturbances develop at or about the time of puberty.

The most common and probably the most important of the symptoms presented, when rightly interpreted, is menstrual pain. Menstrual pain is not a disease, and should never be so considered. It is but a symptom. It probably is never a condition which has not a definite pathologic cause. These causes may be:

Pelvic.....	1. Uterine.....	<ul style="list-style-type: none"> a. Displacements. b. Infantile uterus. c. Metritis. d. Uterine fibroids.
	2. Intrauterine..	<ul style="list-style-type: none"> a. Endometritis. b. Uterine polypus. c. Submucous fibroid.
	3. Ovarian.....	<ul style="list-style-type: none"> a. Chronic ovaritis. b. Prolapse of ovary.
	4. Tubal.....	<ul style="list-style-type: none"> a. Septic salpingitis. b. Catarrhal salpingitis.
Extrapelvic.....		<ul style="list-style-type: none"> Neurasthenia. Anemia. Chlorosis.

I have offered this arrangement of the causes of menstrual pain because I believe the older classification of obstructive, neuralgic, ovarian, tubal and membranous dysmenorrhea has too much tendency to mark this symptom as an entity and thus prevent the proper study of its cause. Many cases in which the pain is agonizing present absolutely normal pelvis. These are the cases in which everything depends on care and patience, and they are of such import as to merit consideration apart from those which have a pelvic cause.

Of the pelvic causes, first, displacement, *per se*, is of the least import. A displacement of the uterus does not in itself give rise to menstrual pain, the old theory of obstruction being untenable.

The pain in these cases is due to the resulting inflammation of the uterus, tubes or ovaries; or if it be an old displacement we may have adhesions. The cure of these depends, of course, on the correction or removal of the pathologic lesion causing it, as, in fact, it will in all cases; but I would emphasize that the displacement, while a primary, is the smallest factor in the case.

In the infantile uterus the entire effort at preparation of the mucosa for fecundation and menstruation is abortive. In many cases menstruation never occurs, or, when it does occur, it is not a free or natural effort. It is an attempt on the part of Nature to prepare an organ for a function to the fulfillment of which it is totally inadequate. First, the mucosa is only partially developed; second, the stroma of the deeper layer of the mucosa and that of the superficial layer are one, and in almost embryonic condition. The only cure is to be found in such measures as will develop the uterus (an almost hopeless undertaking except the girl marry and become pregnant) or in the removal of the tubes and ovaries.

In metritis we have a prolific cause. The explanation is, first, irritation of uterine ganglia causing expulsive contractions; second, pressure on pelvic vessels in the deeper portion of the mucosa, which prevents leucocytes reaching the superficial portion, retards the amy-

loid degeneration in superficial mucosa, and results in more or less destruction of mucosa. This I believe to be the true cause of that distressing condition known as membranous dysmenorrhea, only in these cases the results are all extreme. In endometritis we have predominating a glandular inflammation; the glands enlarge, crowd each other, press the superficial layer into a smaller space, obstruct the superficial capillaries and retard amyloid or hyaline degeneration; the capillaries in the stroma become congested, rupture, pour out their blood, form lacunæ, and literally tear the epithelium from its moorings. This is probably the condition in which the older writers thought there was some obstruction in the cervix, and because dilatation brought relief, gave it the name of "obstructive dysmenorrhea." In these cases due to metritis or endometritis, no permanent benefit can be expected from any method of constitutional treatment. The local condition must be relieved by curettement, or in some cases by judicious local treatment, and here let me emphasize that we should impress on the minds of the profession that curettement is by no means a minor operation, considered from a standpoint of safety. The hand that wields a curette should be capable of any operation which demands skill, guided by that judgment which can and will recognize the existence of pus in the tubes or other intrapelvic structures, for the reason that curetting in cases complicated by pus tubes is a most hazardous operation. The general condition demands most careful attention. More harm is done these women by tinkering, or inefficient local treatment, than by letting them alone. In the majority of cases the curette, rest for two weeks in bed, general tonics and the correction of constipation will accomplish a cure when local applications may, and often do, result in placing the case beyond hope of relief by simple measure.

Uterine fibroids and uterine polypi cause menstrual pain by mechanical obstruction of the pelvic vessels and compression of the pelvic nerves. The cure lies in their removal, or the artificial menopause by the removal of the tubes and ovaries.

Fibroma can not be considered common in young girls, but that a fibroid may be the cause of very serious trouble is shown by the following case:

Miss J. F. E., aged 15½ years. First seen Jan. 14, 1902. Menstruated first at 12, very profuse and lasting six days, accompanied by severe menstrual pain throughout. Has menstruated every three weeks since until past four months, during which she has menstruated every two weeks. Suffering has lately become intolerable. Two years ago noticed a hard, non-sensitive lump to left of median line, low down. This has grown slowly. About three months ago noticed a dull aching in left loin, and a few weeks later a sensitive lump just below left ribs. Examination revealed what was apparently a myoma developing to the left side of the uterus between folds of broad ligament; another mass, which was indistinctly fluctuating in region of left kidney. Operation disclosed a fibromyoma pressing on and occluding the left ureter, with a resulting hydronephrosis and hydroureter. A myomectomy resulted in complete relief of all symptoms.

Salpingitis is a fruitful source of menstrual pain. In the majority of these cases we have simply the result of a neglected endometritis, i. e., the inflammation has extended from the uterus to the tubes. It is suppurative or non-suppurative. The suppurative, although the more dangerous to life, does not give rise to severe menstrual pain until adhesions have formed as a result of peritonitis. That form which is an extension of a catarrhal endometritis results in early occlusion of the tubes, hyperplasia of both the tubal mucosa and mus-

cular wall of the tube, venous engorgement of the tubes and ovaries, and a varicose condition of the ovarian veins. It is in this condition we find the most pronounced premenstrual pain, which is relieved in a few hours after the flow is established. Here the preceding and accompanying endometritis is an important factor. The timely use of the curette will prove our best aid. Let me here urge the necessity of determining the absence of pus tubes before resorting to the curette; for the operation of curetting, when pus tubes exist, is fraught with greater danger than is the removal of the tubes. There is a form of inflammation of the fallopian tubes which occurs as a sequel to the exanthematous diseases. It is usually bilateral, and is nearly always complicated by peritonitic adhesions. The pain is severe at menstrual epochs and resists all forms of local or general treatment.

The consideration of those cases which have an ovarian cause will involve the relation between ovulation and menstruation; a subject too great to be discussed in a short paper. For our purpose it is enough to remember that each month the uterine mucosa develops preparatory to the reception of a fructified ovum, and when that ovum is not impregnated degeneration with rupture of superficial vessels and denudation results in menstruation. Intermenstrual and premenstrual pain can always be attributed to the tubes or ovaries. When to the ovaries we must determine whether it be hyperemia or ovaritis.

Ovarian hyperemia is a common cause of menstrual pain in young girls. Its cause being excitement and ungratified sexual desire, it is apparent that treatment should be such as to direct the patient's thoughts from the genital organs. A change in the social and domestic habits is of prime import. The importance of relief is emphasized by the fact that if unrelieved this condition soon results in chronic ovaritis, hyperplasia, increase of fibrous tissue and complete destruction of the ovary. In the latter condition the pain becomes more severe, more prolonged, and its cure involves the removal of the organ. It matters very little whether the form be cystic, interstitial or hyperplastic, except that the pain in interstitial ovaritis is most severe, while in the cystic we are most likely to find prolonged or profuse flowing, and in many cases intermenstrual hemorrhage. The treatment of any form of chronic ovaritis is too often disappointing and requires for permanent cure the extirpation of the diseased ovaries.

In all these cases the temptation to give opium is great and should be religiously resisted; for so sure as we give it we will make an opium habitué of our patient. In prolapse of the ovary the pain is due to the resulting inflammation of the tubes and ovaries, with the consequent congestion of the entire pelvic contents. There is no method of mechanical treatment which will correct the displacement. Two operative procedures are available: First, if the ovary be not too much affected we can lift it up and secure it by shortening the utero-ovarian ligament, or stitch it to the broad ligament. Second, if the ovaries are diseased beyond repair we can remove them. The power of repair is so great that I am inclined to think we can save a very large percentage.

There is a class of cases in which no disease of the pelvic organs can be detected, and yet the suffering is as severe as in those in which inflammatory trouble exists. These comprise neurasthenics, in whom there seems to be a constant tendency to explosions of all sorts; patients who are anemic or chlorotic. The occurrence of menstrual pain in those subjects is readily appreciated

if we keep in mind the utero-ovarian nerve supply and the physiology of the sympathetic. The nerve supply of the uterus, fallopian tubes and ovaries is largely from the sympathetic, with a few fibers from the second, third and fourth sacral. The sympathetic fibers are from the inferior hypogastric and the spermatic plexuses. The hypogastric is a branch of the aortic plexus, which is derived from the semilunar ganglion and renal plexus on each side. If we remember that these sympathetic centers supply branches to all the abdominal viscera, and then keep in mind the fact that irritation or stimulation of a sympathetic nerve causes contraction of vessels, lower temperature, diminished nutrition and increased tissue waste in the parts supplied by it, the increased tissue waste causing increase of carbonic acid gas in the blood, which adds to the irritation, it is not hard to understand how a neurosis may have, as one of its symptoms, painful menstruation. Particularly is this true if we keep before us the facts of the normal menstrual process, viz., that there is, first, an increase of cell growth; second, multiplication of the stroma nuclei and hyperplasia of the superficial mucosa; third, widening of interglandular and intervacular spaces from hyperplasia; fourth, occlusion of capillaries, degeneration and rupture of smaller vessels, and finally, complete denudation of the uterine mucosa. Neither is it hard to understand how these physiologic processes may become abortive as a result of malnutrition in anemia and chlorosis. Great care is necessary in these cases that we exclude local organic disease, for, if there be an endometritis or other evident local inflammation occurring in these neurotic and anemic cases, I do not believe we ever accomplish any good by constitutional treatment alone, and they are certainly not to be operated on. That there are cases of nervous disease dependent on pelvic trouble we all know. The failure to discriminate between those in which the pelvic disease is the cause of the nervous symptoms, and those in which the neurosis is the primary affection has done much to retard the acceptance of operative assistance, by alienists. I would emphasize the statement that operative measures can not be expected to relieve nervous symptoms except when adopted for the removal of distinctly diseased organs, to the condition of which the nervous symptoms may justly be ascribed. On the other hand, I have seen some marked neurotic conditions relieved without further treatment by the removal of diseased ovaries and tubes, or the plastic repair of an enlarged and indurated cervix.

That a leucorrhea always is a symptom of disease of either external or internal genitalia should be kept in mind. That the cause of leucorrhea may be any one of several serious conditions should demand thorough investigation in every case, whether young or old. Tuberculosis of the genital organs is by no means so rare as has formerly been taught and may be the cause of leucorrhea in very young girls. Gonorrhea, with all its frightful sequelæ, I have seen in a number under the age of 15 years, and in two cases under 8 years. Herpes genitalis may occur at any age and gives rise to profuse discharge. Traumatism may be a factor of leucorrhea in some cases. The fact is no patient who has leucorrheal discharge should be treated in any manner whatever until the cause has been determined with reasonable certainty. Profuse and irregular menstruation may be symptoms of such grave import that it would seem scarcely necessary to insist on these cases being thoroughly examined were it not for the fact that we are continually confronted by the statement, made appar-

ently in good faith by active physicians, "that uterine hemorrhage in young girls only needs iron and bitter tonics to cure it." We can not determine whether the cause be metritis, endometritis, polypus, fibroids, cystic ovaries or sarcomata, except by a painstaking examination, and as any one of these may be the cause it is our plain duty to determine which it is. It is equally our duty as gynecologists and as teachers to impress on the minds of our students and the profession, that it is more important to learn how to thoroughly investigate and diagnosticate these cases than to see us operate, or to listen to a description of technic.

SUMMARY.

1. All cases, whether in young girls or in older women, in which menstrual pain, intermenstrual or premenstrual pain is a prominent symptom should be subjected to careful and thorough examination to determine its cause.

2. No leucorrhea should be permitted to pass unnoticed or treated by such "slipshod" methods as ordering a douche, giving medicine, etc., without first ascertaining its cause. In all cases where discharge is purulent a microscopic examination should be made to determine presence or absence of gonococci, tubercle bacilli or other important septic organisms.

3. All cases of excessive flowing, intermenstrual hemorrhage or prolonged menstruation should be thoroughly examined.

4. In all cases where amenorrhea exists every effort should be made to find the cause.

5. In young girls subjects of neurotic symptoms which develop at puberty or occur with each menstrual epoch, a careful and thorough examination of the pelvis will often reveal the cause.

6. If menstrual pain, irregularity, leucorrhea and neurotic disturbances follow the exanthemata, a pelvic examination is imperatively demanded.

7. In all virgins the rectobimanual examination should be used—the vaginal touch only being used when absolutely necessary.

DISCUSSION

ON PAPERS OF DRs. CARSTENS AND LAWRENCE.

DR. L. S. McMURTRY, Louisville, Ky.—This subject has been greatly neglected by the Section, but has been discussed at length in the special societies. It is a common occurrence for the gynecologist to see young girls whose health has been wrecked by that complex condition known as neurasthenia, when all of the trouble could have been avoided. These young girls pass from one practitioner to another without getting any relief; from the general practitioner to the oculist, and then to the gynecologist, and many finally go to the neurologist. These cases should receive proper attention from the gynecologist, and there is as much to be done by withholding local treatment in many instances as in giving special treatment in other cases. There seems to be a prevailing idea that any young woman who has a disturbance of nutrition with anemia, associated with nervous symptoms, must at once be regarded as possessing no other organ but the uterus, and the treatment instituted in the majority of cases is local rather than systemic. If we could institute some system, and I take it that that is Dr. Carsten's idea, that will be applied by the family practitioner and also by those engaged in special lines of practice, that will early arrest this condition which we call neurasthenia, which will alter the mode of life, environment and education, it would be one of the greatest advances made in any branch of therapeutics. There should be that co-operation between the family physician and the gynecologist that will ensure a sufficiently accurate selection of cases that require local treatment. But the patient should be protected from unnecessary operations and local treatments. Every one engaged in gynecologic work has a large number of these cases

come to him, and up to the present time they are certainly among the opprobria of our art. They are usually referred in some other direction and do not receive that accurate therapeutic attention they deserve.

DR. HANNAH M. GRAHAM, Indianapolis—The general practitioner frequently is too careless in making a diagnosis. For instance, I treated for gonorrhea a girl of 14, a child of one of the best families in the state, who had been under the care of a general practitioner for six weeks when her mother brought her to me saying that she had profuse leucorrhea. The physician's treatment consisted of a tablet every three hours, which gave no relief. The mother objected to an examination of the child, but I finally convinced her that it was absolutely necessary. I found that she had gonorrhea, probably contracted from the maid who took care of the children. It is better to examine one hundred girls who have not gonorrhea than to overlook one that has. We find many girls of 14 suffering from dysmenorrhea due to a retroversion or retroflexion, which can be corrected with a three months' tampon treatment. Why let it go on until it requires suspension or an Alexander operation just because she had not reached the right age? Whenever you find disease you have reached the age to treat it.

DR. G. BETTON MASSEY, Philadelphia—I think it is proper for this section to dwell on such matters. We should endeavor to work out plans for the practical application of the hygienic measures suggested. The fault in the imperfect development of many young girls lies in the mothers, in their housing, in over-clothing, and in their becoming over-finishy. It is hardly appropriate here, but in every section of the Association we ought to condemn the wearing of wool underclothing. In my opinion this is one of the most detrimental things that human beings do; the possibility of catching cold when the girl arrives at puberty is greatly aggravated by abolishing skin action by covering the body with an external skin of non-absorbent woolen material. Girls who spend all their time in the open air lightly clothed and taking plenty of exercise will not go to the gynecologist or neurologist. In the suburbs of Philadelphia the number of healthy girls is very great because an athletic life is fashionable. We can accomplish reform only with assistance of Dame Fashion herself. I agree that examinations are necessary when conditions do not yield to treatment, but I do think that many unjustifiable examinations are made in the clinics. Many young girls are examined when their bowels alone are abnormal; examinations are needed only in the case of girls who are suffering from septic conditions, such as a purulent leucorrhea, or from the manifest presence of a neoplasm.

DR. C. L. BONIFIELD, Cincinnati—I heartily agree with everything Dr. Carstens said, and many things that Dr. Lawrence said, but with the side of the subject that seems to be very popular I am not in accord. I have seen cases that would have been much better for an examination, but these are the exceptions. I believe that there are hundreds of girls going to the office of the gynecologist who have no right to be there. They should be treated by the family physician. The symptoms that are referred to the pelvis are of constitutional origin; and if these girls are treated in the proper way, as Dr. Carstens suggested, if their general health is improved and the development of the uterus is encouraged by forcing nutrition, these symptoms will disappear without any local treatment whatever. Of course, there are cases that require an examination. These are the cases where the symptoms are unusually severe; cases that do not yield to the treatment I have mentioned, but I believe that they are greatly in the minority. When such a case comes to us for examination shall we proceed in the way Dr. Lawrence suggested, make a recto-abdominal examination, which is always more or less unsatisfactory; or give the patient an anesthetic and examine carefully so as to arrive at a correct diagnosis? I take it that the objection to examining young girls is not the destruction of the hymen, but it is the shock to the modesty of the young girl. She is subjected to a treatment of which she really should know nothing. Her attention is called to organs of which she should not think at all.

In the majority of cases if they need an examination they also need operative treatment, and while they are under the anesthetic the little operation, which is usually a curettage, can be done. The objection to local treatment is overcome; our diagnosis is accurate, and we have done the very best we can do for our patient. I believe that if an examination is necessary at all in a young girl it should be done under an anesthetic.

DR. J. H. CARSTENS, Detroit—Dr. Bonifield has said all I want to say. If the young girls are let alone and live a natural life, they will not require the gynecologic finger nor much medicine. What they need is physiology. They should get their eliminative organs into good condition so that they do not absorb excrementitious matter. Get the stomach into good condition, make good blood, and, if they have a little leucorrheal discharge, that will take care of itself. If they are a little nervous they will get over it. This gynecologic tinkering and the giving of all kinds of medicines without any indication for it is going too far. When they have well-marked symptoms of dysmenorrhea and a purulent vaginal discharge, then they should be examined and it should be done under an anesthetic. What I plead for is more simplicity, more physiology, and less medicine and fewer specula.

DR. F. F. LAWRENCE, Columbus, Ohio—Dr. Bonifield's statement as to cases going to the gynecologist's office that do not belong there is true in many cases; but I would ask the members of this section whether it be proper or improper to have a thoroughly competent oculist examine a patient whose vision is failing as a result of chronic Bright's disease, to determine whether or not there is albuminuric retinitis. So far as the treatment of the case is concerned, it belongs to the general practitioner, but how many of us gynecologists, surgeons or general practitioners are competent to make a diagnosis of albuminuric retinitis? This is equally true in gynecologic work. Those men who have had the experience and the training are the men to make these examinations. The treatment of the patient can be carried out by the general practitioner, but if there is need for any operative work the gynecologist, the man who is skilled, should do it. Many cases suffer severely from irritable bladder, although I have found that this symptom exists only in patients having a lithemic or uric acid diathesis, and is rarely found in young girls, except in conjunction with pelvic disease. In from 75 to 80 per cent. of the cases in which this symptom exists it will disappear if you will correct the pelvic trouble and let the bladder alone. It is a constant symptom in every case of pus tubes and in cases of many other pelvic diseases. One of the most suspicious things a woman will tell you is: "Doctor, I have a great deal of trouble with my bladder." Find the cause of the trouble and remedy it; do it honestly, earnestly, manfully and fearlessly.

SKIN GRAFTING FOR THE RESTORATION OF THE EYELIDS.

REPORT OF CASES.*

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Skin grafting for the restoration of the eyelids differs quite materially from that in other parts of the body. The prime objects in operating are cosmetic and restoration of function. To attain these the part must be freely movable and not differ in color and appearance markedly from the normal lid. We have also a field for operation which is movable and uneven, making the results more difficult to obtain. It is for these reasons that I think a discussion of the principles involved should be of benefit.

The statements I shall make and conclusions I have reached are from my personal experience with these cases. Along with the successes I shall give an account of my failures, for I think I have learned more from these than from the cases where the results were satisfactory. I have used most of the forms of grafts described, the sliding graft, the pedicle graft and transplantation of skin from another portion, either full thickness (the Wolfe graft) or the shaving graft (the Thiersch graft). The choice of which one to use must be determined by the individual case.

The primary causes for operating are usually cicatricial ectropion produced by burns, wounds or destructive skin lesions, as blastomycosis and lupus, or to fill in the defect after removal of tumors of the lid. Fortunately since the use of the x-ray the latter cases requiring operation are not so frequently encountered.

In the cicatricial cases we usually have the skin destroyed for a large area, and frequently so deep that the field for placing the graft is devoid of the normal blood vessels, and nutrition is a problem to consider. The condition is very different when the cicatrix is fairly superficial and can be entirely cut through when forming a floor for the graft.

In operating on the upper lid we have conditions very different from those found when operating on the lower. The graft on the upper lid must be as light as possible so as not to interfere with movement or press heavily on the eyeball. On the lower lid we have a tendency to draw away from the eye and we must have support for the lid margin.

I shall not consider the many methods of filling in small defects from the adjacent tissue when there is healthy skin near enough to make it possible. A great many methods may be used, varying with each particular case.

PEDICLE GRAFTS.

The pedicle graft has, in a measure, fallen into disfavor. That it has a place and one which can not be filled by either the Wolfe or the Thiersch grafts I am sure. The advantages of the pedicle graft are that when placed in a region devoid of the normal blood vessels it still has a source of nourishment. It also has the firmness and substance which is very necessary on the lower lids when the muscular tissue is atrophied, and especially when it is necessary to remove the whole thickness of the lid with a tumor. Shrinkage is at a minimum and should not be more than $\frac{1}{4}$ to $\frac{1}{3}$ of the original size. It has also the advantage of being nearly like the skin it should replace and would only be conspicuous against the cicatricial tissue frequently surrounding it. Care, however, must be taken in men not to bring the hairy portion of the cheek around so as to transplant the whiskers on to the eyelids.

As to its disadvantages, the objection to the deformity which its removal may produce is of little importance, for the defect can be easily filled in by Thiersch grafts so that it is difficult to tell where it came from. The most serious difficulty I found was that they were too heavy for the upper lid, where I never attempt to use them now. In one of the first cases on which I operated a large pedicle graft was taken from the temple to form an upper lid, the greater part of which had to be removed with a tumor. It was so thick and rigid that the pressure produced corneal ulceration greatly complicating the condition.

WOLFE GRAFTS.

A great deal has been written both in praise and condemnation of the Wolfe graft. Before the shaving graft

* Read at the Fifty-fourth Annual Session of the American Medical Association, in the Section on Ophthalmology, and approved for publication by the Executive Committee: Drs. J. A. Lippincott, Frank Allport and John E. Weeks.