the patient died slowly from exhaustion four weeks after the second operation, five months after the first operation.

In spite of every effort, he was unable to obtain permission for an autopsy, and the exact point of original rupture of the aorta must remain in doubt.

Since the above report was written, Dr. Matas has published an able article on the subject ("American Medicine," June 22, 1901, page 546; also Transactions of Southern Surgical and Gynæcological Association, 1900), and Dr. Leonard Freeman also read a paper before the American Surgical Association at Baltimore, May, 1901.

One of the dangers of gelatin injections is reported in the *Journal of the American Medical Association,* October 5, 1901, page 923; two deaths being reported from tetanus.

TRANSACTIONS OF THE PHILADELPHIA ACADEMY OF SURGERY.

Stated Meeting, November 4. 1901.

The President, De Forest Willard, M.D., in the Chair.

AN INSTRUMENT FOR FACILITATING INTESTINAL ANASTOMOSIS.

By OSCAR H. ALLIS, M.D.,

SURGEON TO THE PRESBYTERIAN HOSPITAL.

My first intestinal anastomosis was with the Murphy button. With its magic assistance I united the small intestine to the stomach to overcome pyloric obstruction. As the button was not subsequently found in the stools, the blame was visited upon the attending nurse. A year or more later it was found at the autopsy in the stomach.

In my second employment of the button for fæcal fistula, the walls of the intestines to be approximated were thick and infiltrated and unsuited to the buttons in ordinary use. I did the best I could with the button, but the thickened walls held it a prisoner and would not let it pass on. The result was a second fistula at the point of operation. In due time I cut down and removed the button. Several months later I again attempted to close the fistulous orifice. I had to resect the gut, and when I had done this, I found the spring out of order in the button that I had depended on for my closure of the parts. Left to my own resources, I was obliged to unite the severed gut-ends as best I could. The result was satisfactory, and since then I have depended on no other instruments than those described in the present communication.

I think that surgeons, after a little experience in anastomoses, rely more confidently upon their fingers and simple forceps and the suture than upon any of the appliances that

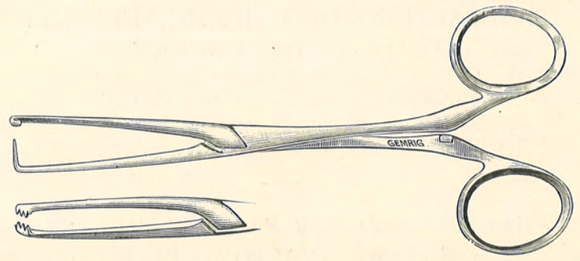

FIG. 1.—The tenaculum or basting forceps above; below are the rat-tooth forceps. By a misunderstanding, the teeth are placed at the end instead of at the side.

have been specially contrived for the work, and the reason is obvious. No single instrument and no series of instruments can meet all the requirements; and it not infrequently hap-

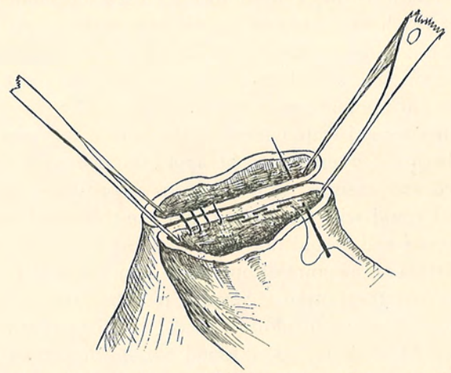

FIG. 2.—The first attachment of the tenaculum forceps holding the separated gut-ends for suturing.

pens that an anastomosis is demanded when none of his kit of special instruments is at hand. Such, at least, has been my experience.

If one notice a tailor at his work, he will observe that before he takes a single stitch he prepares his work by basting

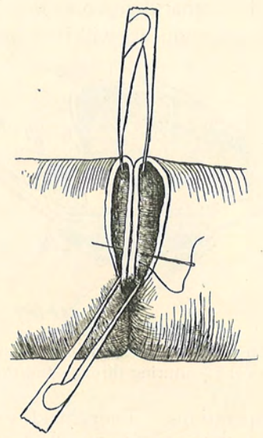

FIG. 3.—Advanced stage of suturing, *i.e.*, Fig. 2 advanced farther towards completion, suturing still the same as in Fig. 2.

it. The surgeon in his anastomotic work needs to do basting more than in any other part of the body. This is done to some extent by the Murphy button. The Laplace and O'Hara

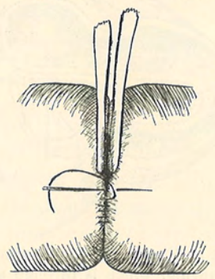

FIG. 4.—Final steps in closing the bowel. Figs. 2, 3, and 4 form a series.

instruments are convenient forms of basting while the surgeon secures the approximate parts with suture.

The first instrument that I describe is my basting forceps. They will probably be known as tenaculum forceps, since the end of one blade is a tenaculum concealed in the loop of the other blade. These instruments will be found very serviceable

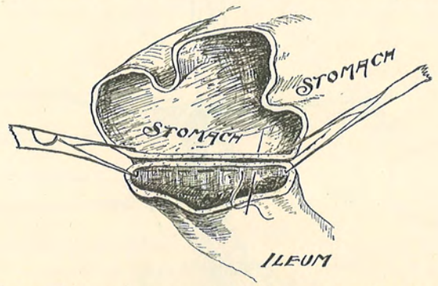

FIG. 5.—The small ileum is represented as being sutured to the stomach—end to end—suturing through and through.

in many minor operations. They make excellent retractors. I have often found them of great service in securing a piece of protective along the cut edge of the wound with a view to protecting the field of operation. In operating for varicocele

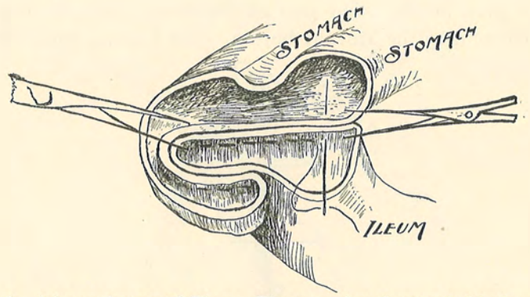

FIG. 6.—Advanced stage of Fig. 5. The tenaculum forceps holds the parts for easy suturing, which is through and through.

(open method) I secured a clean piece of muslin to the edge of the wound, and thus shut the penis, scrotum, and pubes from the field.

In using these instruments on an ordinary anastomosis, I seize the parts that I wish to unite and bring their serous surfaces together, just as one would bring the two ends of his coat-sleeves together by placing them side by side. Having transfixed them as shown in Fig. 2, I begin my suturing, sewing through and through or over and over. The kind of suture employed is immaterial, provided only that it transfixes both walls. The gut being clasped as in the figure, fully half the circumference of the gut-ends can be closed. I now take off the forceps on the left (Fig. 2) and reclasp them where

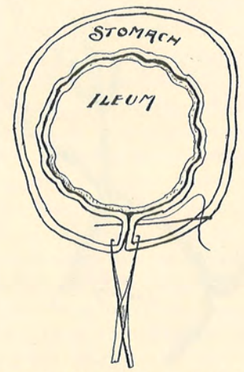

FIG. 7.—The suturing in Fig. 6 has finally united the whole circumference of the ileum to the stomach, and the needle has begun to close the remaining part of the stomach.

the suturing terminated; taking off the forceps on the right, I can reattach them still farther to the right, basting more gut surface for the permanent suturing (Fig. 3). In this way ordinarily fully two-thirds of the circumference of the gut can be sutured from *within the gut*. Indeed, it is possible to entirely unite two divided gut surfaces by end-to-end suturing, with every suture starting from the mucous surface. The advantage, however, would be very little over a *serous* suture, and the disadvantage of delay will be something.

The final closing of the gut-ends will be very conveniently

done by means of a pair of forceps with teeth on the sides. By means of these the border of the gut can be seized and inverted, after which both forceps can be held in the left hand while the right is suturing (Fig. 5). At a glance the amount of suturing from *within the gut*—fully two-thirds can be seen—is made to perforate all the coats of the bowel. This secures enough tissue for a safe closure, and insures the passage of the suture into the lumen of the bowel.

I have never resected a part of the stomach and made an

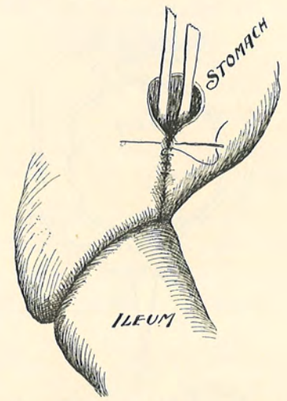

FIG. 8.—The entire circumference of the ileum has been attached to the stomach without a suture showing on the outside, and the remaining part is being turned in by the forceps, with teeth on the edge for convenient suturing. Figs. 5, 6, 7, and 8 form a series.

anastomosis between it and a part of the small bowel, but the following method, somewhat unusual, is entirely feasible. The two structures to be joined are brought together and basted by the forceps as in Fig. 6. This done, the forceps on the left are carried over to the point where the suturing ends and reclasped, while the forceps to the right are made to clasp unsutured parts and hold them until sutured.

In the figure, the needle is supposed to enter at the point where the suturing ceased. The part between it and the forceps on the right is still unsutured. Since the cut border of the stomach will in most instances be greater than that of the small intestine, it will be entirely practical to sew the two together as represented in Fig. 8. (Compare Figs. 7, 8, and 9.) Having sutured the small bowel to the stomach end-to-end, the remainder of the stomach approximation can be readily completed by means of the forceps (Fig. 5), which seize the borders and turn them in while the sutures are applied.

DISCUSSION.

DR. CHALMERS DA COSTA said that he had used these instruments of Dr. Allis in general surgery but not in intestinal work, and had found them signally useful in operations, especially in hernia and for catching isolated blood-vessels and perforating vessels of the chest wall. He had used them with satisfaction in a goitre bleeding profusely from the surface of the gland. They are extremely useful in opening the peritoneal cavity, and for that purpose are to be preferred to the dissecting forceps.

DR. DE FOREST WILLARD said that in Connel's operation of intestinal anastomosis, leaving all the knots inside the lumen, all the coats of the bowel are sutured as in Dr. Allis's method, except that he makes a loop or rectangular stitch. To secure the final suture, when he comes to the last one he leaves the two ends untied; then inserts a fine threaded needle, eyed end first, from the opposite side of the gut between two of the stitches, catches the untied ends in the loop of thread, draws them out upon the opposite side by pulling up the lower wall of the bowel and flattening the cavity. The knot is then tied through the small opening between two stitches, the ends cut off, and the knot then allowed to escape back into the lumen of the gut. Every knot is thus left inside the lumen and will take care of itself. He has demonstrated both by experiment and by operations on the living subject that suture of all the coats is perfectly safe and that there is no leakage. There is no infection as to the peritoneal cavity. The peritoneum will cover over the line of union in a few hours.

DR. RODMAN said that Dr. Allis had recognized the trend in favor of direct suturing in interstitial work, and his instrument simply facilitates this method. It provides one with more fingers, and enables one to do without assistants what possibly could not

be done so well with them. Dr. Rodman had up to that time felt perfectly satisfied with the Murphy button. His results had always been good, and he had, therefore, not felt justified hitherto in giving it up, although theoretically there are objections to its use. It may not be ideal, but it is life-saving oftentimes. In using the button much depends upon the case, the size and shape of the button used, and, above all, one should be certain that it is manufactured by a reliable instrument maker. This is most important. He had known cases where the button was retained for several weeks, but in all of his patients it had promptly passed when the patient assumed the erect posture and began walking about.

Dr. A. A. Davis asked whether the use of the through-and-through suture had been tested in a sufficient number of cases to demonstrate that there is no danger of leakage. The tendency to leakage in the bowel is quite marked in cases in which there is even such a small opening as a hypodermic syringe needle makes, the liquid contents of the bowel oozing through.

DISTAL LIGATION OF COMMON CAROTID AND RIGHT SUBCLAVIAN ARTERIES FOR ANEURISM.

Dr. John Chalmers Da Costa reported the case of a man, aged forty-five years, a blacksmith by occupation, who was admitted to the Jefferson Medical College Hospital December 4, 1899. When he was twenty-seven years of age he contracted syphilis, and was treated for it for a year or more. Seven years before his admission to the hospital, he began to have severe headache in the occipital region. The pain would come on without apparent cause, was of a sharp, boring character, and was aggravated by recumbency or by the use of the eyes in reading. He was given iodide of potassium, which relieved him; but whenever the drug was discontinued the pain would return. These attacks came on suddenly, in distinct paroxysms, and were not accompanied by sick stomach. During each attack he was compelled to abandon work for two or three days. He took iodide of potassium, off and on, for about five years. The dose was then increased, and for three months he took 280 grains a day. After

a time these large doses seemed to lose their effect, and the drug was discontinued.

During the seven months immediately preceding admission, he had taken no idodide of potassium whatever. During the antecedent two years the pain had become localized at a point two inches posterior to and a little above the mastoid process of the right side. It was not associated with tenderness, but at times became so violent that it was necessary to administer morphia to give him relief.

The eyes were examined by Dr. De Schweinitz, who reported as follows: "The eyes react normally to light, to accommodation, to convergence, and consensually. The media are clear and the fundus is normal. The nerve is of good color and the margins are distinct. The field of vision is normal, and there is no indication of a central nervous lesion."

The patient apparently had two varieties of pain. He has occasional attacks of undoubted neuralgia in the supraorbital and occipital regions, and also attacks of more deep-seated and persistent pain which, it may be, arise from some gummatous intracerebral condition. An examination of the patient showed that he had an aneurism of the right common carotid artery, in the root of the neck, and an aneurism of the innominate artery. The innominate aneurism caused very distinct bulging of the first and second costal cartilages, great pulsation, marked bruit, and distinct thrill. It seemed that the aneurism of the carotid was distinctly separated from the aneurism of the innominate artery. In view of this belief, it was determined to ligate the right carotid artery, the ligature being distal to the innominate aneurism and proximal to the carotid aneurism, and to also ligate the right subclavian artery, for the effect upon the innominate aneurism.

On the 13th of December, nine days after the patient's admission, he was operated upon before the class in the Jefferson Medical College Hospital by Dr. Da Costa, Professor Keen assisting in the operation. He first made an incision in the neck and explored the carotid artery. Through this incision he was able to outline the aneurism of the carotid and to feel the vessel between that aneurism and the larger aneurism of the innominate. He found that the vessel was glued to its sheath by adhesions, and was undoubtedly diseased between the two aneurisms. He therefore decided that it would be inexpedient to apply a ligature

between the aneurisms. The vessel was exposed just below the bifurcation, and a ligature was applied, which was distal to the carotid aneurism as well as to the innominate aneurism. This ligature was of chromicized catgut. After the common carotid artery had been ligated, the wound in the neck was closed, and an incision was made to expose the subclavi n artery in the third part of its course, which was ligated with silk, after which the superficial wound was closed.

There was practically no shock from the operation. The temperature never went below normal. Immediately after the termination of the dressing of the case, the right arm was wrapped in cotton, and was kept warm with bottles of hot water for forty-eight hours. On the 16th of December (that is, at the end of the third day after the operation), the radial artery of the right arm was found to be pulsating. On the sixth day after the operation, the patient was given a hypodermatic injection of thirty-two cubic centimetres of Carnot's solution of gelatin, with the hope of aiding coagulation in the aneurismal sacs. It was noted at this time that the pulsation and thrill of the innominate aneurism were much less, and of the carotid aneurism distinctly less.

On the 10th of January the patient was allowed to sit up for part of the day; and on the 11th he sat up for most of the day. From this time on he improved, having occasional paroxysms of neuralgic pain in the head coming on at night; and he was placed on iodide of potassium, which seemed to give him relief. He was discharged from the hospital on the 18th day of January, a little over a month after the operation. At this time the aneurism of the innominate artery could be detected with difficulty. The very distinct bulging of the chest had passed away. There was still a perceptible murmur or bruit, but scarcely any thrill. The carotid aneurism was very much shrunken, and the pulsation felt far away.

For a time the man seemed to have been wonderfully benefited by the operation. Against advice he returned to his work as a blacksmith, an occupation in which he even shoed horses. From that time to this he has still gotten along very well, although he has recently noticed an increase of pulsation in the neck. On the 28th of October (1901) the patient again called at the Jefferson College Hospital, and was examined by Dr. Da Costa.

It was then obvious that he had disease of the carotid artery of each side, and that the circulation in the right carotid had been re-established. Throughout its entire extent the right carotid beat forcibly, and at one part, about the seat of ligation, was apparently aneurismal. The left carotid was dilated and pulsated forcibly. The re-establishment of the circulation may have been due to the early absorption of the ligature of chromic catgut. It is probable that the direct cause was the reckless return to violent labor. There was no bulging apparent at the seat of the innominate aneurism; and, comparing his present condition with that of two years ago, he was still wonderfully better, in spite of having labored at his most dangerous occupation.

The urine report of October 29, 1901, shows that fluid to be of a clear, amber color; acid reaction, and with a specific gravity of 1030, containing 1.9 per cent. of urea, a few leucocytes and epithelial cells, and a trace of albumen, but no casts.

The blood examination made October 31 shows erythrocytes, 5,462,000; leucocytes, 10,200; hæmoglobin, 78 per cent.; color index, 71 per cent. The differential count is as follows: Polymorphonuclear neutrophiles, 71 per cent.; small leucocytes, 14 per cent.; large leucocytes, 14 per cent.; eosinophiles, 1 per cent.

The eye examination, made by Dr. William Sweet, October 31, is as follows: "Media of both eyes, clear; pupillary reactions, normal; marked arterial and venous pulsation present in both eyes, but more marked in the left; no disease of either eye-ground."

The physical examination by Dr. Julius Salinger, November 7, is as follows: "The impulse of the heart is best seen in the midclavicular line, at the base of the sixth interspace, and is diffused to the ensiform cartilage, being quite forcible in the midclavicular line. There is marked pulsation of the vessels of the neck, especially of the right side. No thrill is perceptible in the mitral area, but just above the clavicle, on the right side, a coarse systolic thrill is manifest. There is no diastolic shock and no tracheal tugging. All over the precordium, a coarse, blowing, systolic murmur is perceptible, its area of maximum intensity being over the aortic cartilage. The second aortic sound is scarcely perceptible, and the systolic murmur is transmitted to each carotid artery."

MISAPPLIED MECHANICAL SUPPORT TO WEAK ANKLES OF CHILDREN.

By H. AUGUSTUS WILSON, M.D.,

CLINICAL PROFESSOR OF ORTHOPEDIC SURGERY IN THE JEFFERSON MEDICAL COLLEGE; ORTHOPEDIC SURGEON TO THE PHILADELPHIA HOSPITAL.

THE vast majority of the human race who wear sandals or moccasons or go barefoot escape the tortures and malformations that follow the wearing of such shoes as those in use in our country at the present time; it would appear, therefore, that the shoe or kind of shoe is responsible for at least some of the disabilities of the foot and ankle. The shape of the sole of the shoe has received much attention from orthopedic surgeons, and reforms in some have been secured. It is the purpose of this paper to consider only weak ankles in childhood, and forms of mechanical compression and restraint commonly in use which are at variance with common sense.

The cases usually seen may be conveniently grouped as follows:

(1) Undeveloped normal feet in normal bodies.
(2) Normal feet in fat children.
(3) Apparently normal feet in rhachitic children.

There appears to be a growing tendency to apply to all children's shoes some more or less rigid support in the form of high uppers, stiff leather counters, whalebone, and even arch-raisers of various materials. Many of these appliances are strongly advocated by shoemakers and by them applied; but not infrequently physicians prescribe their use, and add their testimonials to favor still further sale, and even text-books are found which recommend them.

Given a case of an apparently normal child beginning to walk. It is natural that functions that have not been em-

ployed heretofore would be faultily performed. The muscles that have not been employed in this capacity are not capable of sustaining the weight of the body or of holding the arch up into its subsequent normal position; and the advocates of mechanical support accept these conditions as clearly indicating the necessity of holding the foot and ankle fixedly to avoid still further relaxation of muscles and ligaments until the child grows strong enough to dispense with support.

If this theory is correct, its application elsewhere would indicate that the proper treatment for muscular weakness in any part of the body would be rest induced by mechanical apparatus or by confinement to bed. Still further, fatigue, sprains, and muscle strains, likely to accompany or follow physical exertion such as in foot-ball, boat-races, and athletic sports, would be prevented by keeping the muscles in a state of inactivity in preparation for use. This sounds absurd, but it is not more so than the application of restraint to weak ankles and feet of infants about to walk.

All children are flat-footed because the muscles have not developed the arches of the foot, and use is required to bring the muscles into full development; proper development can only be obtained by perfect freedom from restraint.

Civilization is undoubtedly responsible for a vast array of ills and disabilities of the human frame, but nowhere is this more manifest than in the feet of young children. Those that escape the sole-leather-crippling apparatus are subjected to milder forms of restraint in the leather shoes with high uppers which, even if made of soft leather, must necessarily bind the ankle and foot, thereby preventing full function. The resulting sprains and faulty uses of the feet of children from six to ten years of age are a natural sequence. The faulty position and uses of the toes are often remarked. T. S. Ellis, in his monograph, "The Human Foot," says, "The toes play a far more important part in the ordinary functions of the foot than is generally admitted. One sees statements (where better things might be expected) to the effect that their services could be dispensed with. If they were not used, the muscles

moving them would be found to be wasted." It must be recognized that the absence of function is at first normal, and that the subsequent deformities are incidental to the customs of civilization, being confined to shoe-wearing people.

The softer the material of which the infant shoe, including the sole, is made, the less hinderance will there be to the normal development of the encased foot. The knitted sock or the Indian moccason is entirely free from objection and criticism; by their use the foot is protected from cold and is free for natural movement and development. The avoidance of prolonged weight-bearing, the avoidance of fatigue and muscle exhaustion, will enable the feet to properly and normally assume the strain of use. The fact, which is beyond dispute, viz., that the process of civilization deforms the feet and produces loss of proper mechanical functions, is clearly sufficient indication that the correct course to pursue is to avoid all restraint to full perfect function.

The most beautifully formed adult feet that I have seen have been in those who never, as child or adult, have worn shoes; they may have worn sandals which required the action of muscles to retain them in place, but this was in the line of correct use. In contrast, the most serious sprains of the ankle that I have seen in children have been in those who have had inadequate muscle and joint function. Careful inquiry has almost always elicited a history of weak ankles from early infancy and the use of high-counters or some such equally reprehensible and mechanical restraint to normal function. After the acute pain caused by the sprain has subsided, these cases require massage and carefully applied physical culture to develop the muscles and establish full function to prevent recurrence, in contrast to maintenance of immobilization previously employed.

The medical profession has accomplished many needful reforms in fashions and customs by directing attention to their dangers. There appears to be a necessity for discouraging the use of the extensively advertised and too generally used so-called supporters for weak ankles, the use of which is not only

irrational, but also decidedly harmful, and it is my conviction that they are never beneficial.

The routine plan alluded to, of applying restraint to normal infant feet, appears to have its basis in the fact that in some cases support or even rigidity may be necessary as a temporary expedient while remedial measures are carried out, but should be discontinued as quickly as possible. The cases that may require some form of mechanical support are those that are enfeebled or rhachitic. It must be accepted that in the cases just alluded to destructive changes may occur before muscular coördination can be established, and therefore support without rigidity is often required. The most convenient and efficient form of brace for this purpose is one that is constructed of sheet-steel with a movable joint at the ankle and which is placed within the shoe. The temporary use of this brace does not interfere with full muscular development of the foot, and yet it provides efficient lateral support. Whenever a joint is prevented from action, the muscles which actuate it become atrophied from disuse, and the longer the time that such rigidity is applied to a joint the greater is the disability.

In infants the feet are the most notable in their faulty mechanical use from their more exposed position; but in fact the knees and hips are, upon inspection, generally found to be equally undeveloped, and therefore faulty in action, but are never subjected to similar forms of rigid appliances. The mandate of fashion, however, dictates that the infant foot should be prepared for shoe wearing, and therefore the process is started early in life. When the unnatural foot covering is used in a way unsatisfactory to the trainers, when the little encased foot turns over on its side or becomes pigeon-toed, early recourse is had to the high-counter, corset-shoe, felt or steel arch-raiser, or wedging of the sole. The natural method of removing the cause, *i.e.*, the shoe, appears to be considered objectionable for some unaccountable reason. Proof that removing the shoe is the best procedure can readily be found in the strong, active, correctly shaped feet of young children who have not worn shoes.

The methods pursued in the high-caste Chinese woman's foot should teach a lesson. The little girl was formerly, in many districts, allowed to run barefooted until the age of five years in order to develop the feet. At this age the deforming bandages were applied, and at the end of two years had permanently distorted the feet to an unrecognizable mass and rendered them permanently useless. The plan pursued by shoe-wearing people begins earlier, is slower in accomplishing the results, but the disfigurement and disability ofttimes differ only in degree.

The least objectionable shoe for young children is a low shoe or slipper which possesses the advantages of sandals. Nothing can be gained by the upper, which has the constant disadvantage of cramping the ankle, and thereby preventing its full free use and development. The serious disadvantages of the upper are greatly increased by the various methods of increasing its stiffness, by the addition of movable strips of sole leather on each side as in the pocket shoe, by strips of whalebone or steel as in the corset-shoe, by the high-counter, by the sole leather so-called weak-ankle supporter made independent of the shoe. All of these appliances by inhibiting joint motion naturally induce atrophy from disuse, and therefore make the ankle weaker and less capable of assuming normal functions.

The arch-raisers of steel, felt, or other material may make the appearance of an arch, but it is a faulty arch in that dependence upon this form of mechanical support increases with use, while the tie-rods upon which the arch normally depends are cramped out of usefulness and made to deteriorate by disuse.

The wedge-shaped sole is equally objectionable because its use merely overcomes the appearance of the feet turning laterally, while in reality it hampers normal latitude of motion, and thereby aids muscle disuse.

The constriction of the rubber elastic anklet is without a single rational explanation based upon sound mechanical laws, and yet its use is very common. The strongest argument against the employment of these aids to permanent deformity and false mechanical use of the feet may be found in cases where entire freedom from restraint has obtained, and where physical culture has been relied upon to develop muscles and function. In these patients the ankles, as well as the knees, hips, and other joints, have been trained to their normal standard of use and function and rendered capable of sustaining extensive usage without injury. The wonderful recuperative power of the human being makes it possible to greatly interfere with its functions, and yet not show great deterioration, or even obtain a fair semblance of normal use. These cases that appear to recover by the use of appliances here referred to pay tribute to their own wonderful recuperative powers and not to the irrational means used to hinderance.

In that group of cases of weak ankles classed as rhachitic may be found the explanation of all the evils irrationally applied to really normal feet. In rhachitic children it often becomes necessary to apply aids to mechanical function not alone because of muscle insufficiency, but also on account of the lack of stability of the bones. Deformities of the feet are frequently associated with malformations of the long bones, such as the valgus foot and bow-legs and knock-knees, each depending more or less upon the other and upon the constitutional disease for their development.

No routine plan of treatment can be laid down, for discernment is required to meet the mechanical inefficiencies by mechanical aids that will be of benefit and not prove injurious. When some form of splinting becomes necessary care should be exercised in securing a freely movable joint to correspond with the ankle, thereby favoring proper usefulness of that joint without producing deformity. Internal medication, attention to hygiene, diet, guarded exercise, and similar measures will facilitate establishment of normal function in enfeebled apparatus.

I would direct attention to the following conclusions:

The natural human foot best performs its functions when it has been freest from restraint.

The natural foot can be quickly crippled into inefficiency by high-counters, corset-shoes, arch-raisers, wedges, and elastic anklets.

The natural foot, when burdened by misapplied mechanics, is rendered weak, and therefore susceptible of sustaining injury, such as sprains and the formation of bunions, flat feet, wabble joints, etc.

The natural foot in a constitutionally weak or rhachitic child may demand mechanical aids specially adapted to the individual requirements and peculiarities of the case.

That it is the duty of the medical profession to discourage the indiscriminate use of high-counters, corset-shoes, elastic anklets, arch-raisers, and sole wedging, which are known to be injurious, unmechanical, and productive of permanent loss of function.

APPENDIX.

The following extracts from an advertisement recently received are illustrative of the absurd and unfounded statements of those who will sell their goods whether they produce injury or not.

Comment is unnecessary.

Children's ankle supporters. Will fit any shoe—button or lace. Especially adapted for children learning to walk. When ordering, please state the size of shoe usually worn.

The toe-in shoe. It is really surprising how many children need a shoe to prevent the awkward habit of toeing-in, and need it most just when they are beginning to walk; when, if our little "Toe-in" shoe is worn habitually, this tendency can easily be overcome, almost unconsciously, and wholly without discomfort or annoyance. It is a very simple device in the construction of the shoe, and, although so effective, is not noticeable except as attention is directed to it.

To prevent or cure bow-legs in children. The shoe to prevent or cure bow-legs has to do with a still more serious deformity, as, after the bones of a bowed leg are fairly hardened, nothing less than a surgical operation will afford a remedy. This shoe is so designed as to throw the weight of the body in a way to completely counteract the tendency of the legs to curve outward, and they straighten of themselves. There is nothing to attract attention—no conspicuous brace or bandage. We recommend their use as early as the child shows any inclination in this direction.

Ankle and arch supporting shoe. Our new shoe to strengthen weak ankles is the best thing of the kind we know of. It holds the ankle with a firm but gentle and yielding pressure; it also supports the arch of the foot, which in most cases is the real point of weakness, and the cause of turning ankles. It also effectually prevents flattening of the foot—one of the very worst of orthopedic evils.

Instep-arch supporters. A positive cure for flat feet. These supporters are extremely light in weight, can be easily worn in any shoe, and, owing to their flexibility, are far superior and vastly more comfortable than the old-fashioned rigid devices of steel and bronze employed to correct the above condition.

DISCUSSION.

Dr. G. G. Davis said that while the parents of children will direct their attention to the weak ankles, they will practically ignore the conditions which produce them; in other words, they will direct their attention to a local condition, and the general condition will be entirely ignored. Of course, weak ankles can come from various causes, but in young children it is often associated with rickets. Weak ankles are a single symptom. It may be the symptom which attracts most markedly the attention of the parents. They will then proceed to adopt one of those contrivances which are for sale in the dry goods and shoe stores, and which fail to correct the cause of that condition. If such a child is examined, it will be found not only to have weak ankles, but likely bow-legs, and show other evidences of rickets. The remedy is to be directed in an entirely different direction. It is to be directed to a strengthening of the parts rather than simple support. The object desired in these cases can be achieved in a different way. Oftentimes an ankle support is used to prevent abduction or adduction of the foot. That can be guarded against by raising, for instance, the inner or outer edge of the sole, and will not prevent the full use of the joint. He was personally not much afraid of restricting the motions of the joints. In small children, a brace on bow-legs is just as efficient with or without an ankle-joint, and he did not think that the foot or the lower limb would seriously suffer; but if one simply puts a support on an ankle-joint in a child whose general life is absolutely wrong, who is not living on the right food, then, of course, one fails to cure the case, and for that reason these appliances are most objectionable.

GASTROSTOMY.

Dr. John B. Roberts said that in August of this year he saw in consultation with Dr. Albert A. G. Starck a patient who had fallen from a step-ladder and sustained a fracture of the femur. The man was in the neighborhood of sixty years of age and was treated by extension.

About two weeks later Dr. Starck asked him to see the patient again, saying that he had discovered some difficulty in the œsophagus, and that on inquiry he had found that the man had not been able to swallow properly for a number of years. On examination with a tube they found a stricture at the lower end of the œsophagus; and it became evident that the patient for months had been half starved because of the interference with deglutition. The condition was so bad that two days later he did a gastrostomy.

The patient was so prostrated that operation under local anæsthesia was done. About half an hour before the time of operation the man was given a hypodermic injection of codeine sulphate, one grain, hyoscine hydrobromate, one-fiftieth of a grain, and strychnine sulphate, one-sixtieth of a grain. He had seemed a little drowsy before this injection, and promptly went to sleep while they were preparing for operation. He was asleep at the time the incision was made, though the skin was frozen with ethyl chloride. A two-inch incision was made parallel to the left costal border, about half an inch from that border and beginning nearly an inch and a half below the tip of the ensiform cartilage. The rectus muscle was split at the left side of the wound, and two ropes were made of its fibres; these were crossed. The operator drew a portion of the stomach out of the peritoneal cavity and slipped it through the space made by these displaced and crossed muscular fibres. A tunnel was made through the subcutaneous tissues, and the end of the projecting part of the stomach was brought out of a second incision which had been made, after freezing the skin, close to the costal border. After the sutures had been applied, the stomach was opened and a large rubber tube introduced.

Two or three times during the progress of these manipulations the patient moved as if he felt some pain. He was then given a few whiffs of chloroform. The amount given, however, was so small that it could have had very little effect; for the towel upon which the chloroform was poured was held to his face for only a minute or so. When the skin sutures were applied at the end of the operation, he flinched a little; but otherwise he was quiet, except for the motions mentioned above. He slept a long time after the operation.

A few days later some suppuration was noticed in the wound. It was probably due to a slight amount of leakage alongside of the tube. The small amount of pus was evacuated by taking out sutures, and the wound then did well. The recovery from the operation was prompt, and the man was fed with liquid food. He died sixteen days after operation from debility. This was probably due to the chronically starved condition from which he suffered, and the added depressing effect of the fracture of the femur and of two small bed-sores which had formed, despite the greatest care on the part of the family and nurses. No autopsy was obtained.

The case is reported merely to put on record the ease with which the operation was done under local anæsthesia and the comparative innocuousness of aseptic gastrostomy. The operation, of course, should have been done at an earlier period; but the patient had not been under the care of Dr. Starck until he received the injury by which the femur was broken.

The opening made into the stomach permitted during the latter part of his illness some leakage of the fluid introduced. It is probable that if he could have assumed the erect posture, the stomach would have held the food satisfactorily. The fixing of a portion of the stomach in the subcutaneous tunnel and the construction of the artificial sphincter by crossing the two portions of rectus muscle would probably have been sufficient to keep the gastric orifice closed around the tube used for feeding.