of medicine than in any other, and satisfactory deductions can only be drawn when the history of the patient, the physical signs and the data relative to the contents of the stomach are considered together.

DISCUSSION.

DR. R. F. CHASE of Brookline: Dr. Joslin has very thoroughly and concisely discussed a very broad subject. He has left very little to be said upon this subject. There are, however, a few points to which I wish to refer with the object mainly of emphasizing their importance:

When a patient comes to the physician for an examination of the stomach, he should not have eaten anything for at least six hours.

With a fasting stomach the physician can at once proceed to give a test meal and later examine the gastric contents obtained therefrom. Or, should it seem preferable, he can obtain the fasting contents (if there are any), then inflate and determine the size and position of the stomach.

Either part or the whole of such an examination may be made at the first visit, providing the patient comes with a fasting stomach. Whereas if he comes with a full stomach none of these tests can be conveniently carried out at the first visit. Dr. Joslin has already said that several examinations may be necessary to establish a diagnosis.

I particularly desire to emphasize the importance of this point, because I know there are physicians who have the impression that one chemical examination of the gastric contents is sufficient to enable one to make a diagnosis of any gastric affection. Such, however, is not the case. Besides the chemical examination of the gastric contents, the size, shape and motility of the stomach must be determined in all cases, and in many cases new phases of a disease appear which require prolonged study that they may be recognized and properly treated.

The average amount of gastric contents obtained one hour after the administration of an Ewald test meal has been stated by the reader as 90 cc., or 3 oz. I consider this amount a very fair average, but one must remember that it is only an average, the maximum and minimum normal limits being very wide, varying from about 20 to 150 cc.

A healthy student upon whom I recently made some tests yielded, on several successive days, from 120 to 160 cc. of gastric contents. On a certain day preceding a school examination which he was to take, I was able to obtain only 10 cc. one hour after the Ewald meal, and this gastric juice contained no free HCl, whereas on the previous examinations the free HCl had always been normal. This temporary suppression of the gastric secretion I attributed solely to nervousness arising from anxiety over his pending school examination.

Small amounts of gastric contents are obtained in the conditions referred to by Dr. Joslin, namely, in diminished secretion, in hypermotility of the stomach and in cases of patent or lax pylorus.

In these conditions it is frequently, I may say usually, necessary to introduce the stomach tube within thirty or forty minutes after giving the Ewald meal, to obtain any contents for examination.

Failure to obtain the average amount of gastric contents one hour after the Ewald meal does not necessarily indicate the existence of one of the conditions just mentioned; it may mean that the entire contents of the stomach have not been removed.

Lavage of the stomach will clear up this point, because if the contents have not been entirely removed crumbs of bread and cloudiness of the wash water will be observed. Formerly I used (as recommended by some) a Davidson's syringe bulb in evacuating the stomach contents and in 20 to 30% of all cases I obtained small amounts of blood. I now use a different bulb, and do not encounter blood in more than 2 to 4% of all patients. Small amounts of blood, however, are frequently of no significance.

Mucus must *not* be confounded with saliva, which as a rule runs freely down the *outside* of the tube. The former is recognized by its stringy nature and comes of course only from the *inside* of the tube; it is also well seen when pouring the contents from one vessel into another.

Excepting the detection of blood, or food which has been eaten one or two days previous, an examination of the vomitus from a patient does not aid one much in the diagnosis of gastric disease.

Dr. Joslin has stated that during a three months' hospital service he has failed to encounter one case of chronic gastritis.

During a present ten weeks' service I have also not met one case of chronic gastritis. This disease of the stomach, of which we hear so much, is not nearly so common as is generally supposed.

New Instrument.

A CHEAP TRACTION SPLINT.¹

LOUIS T. WILSON, M.D., BOSTON.

This splint was made primarily to fill a need for a cheap, light splint suitable for bed traction on hip cases at the Children's Hospital, Boston. The average hip splint is heavy, requires a skilled mechanic to manufacture it, is therefore costly and thus often beyond the reach of the physician, outside the large cities, who may have hip cases under his care. It was desired, therefore, at the same time, to make a splint of such simple construction and material that it could be easily made by any mechanic, blacksmith or even the physician himself if necessary, at a very small cost. Sheet steel and gas-pipe can be easily obtained in almost any town, and from these materials this splint was made.

¹ Presented at the Annual Meeting of the American Orthopedic Association, Washington, D. C., May 14, 1903.

FIG. 3. — TRACTION WINDLASS AND FOOTPIECE.

The upright and foot piece are made from one piece of $\frac{3}{8}$ -inch iron gas-pipe. The upright, where it joins the pelvic band, is simply heated and flattened for a distance of about one inch. The lower end forming the foot piece is also heated, flattened and bent to the desired shape. Care should be taken to flatten the pipe for a distance of three to four inches up on the upright to allow a flat surface for the windlass arm.

The traction windlass is made from $\frac{1}{8}$ -inch steel wire bent to a right angle. One arm is inserted into two holes bored in the foot piece, while the other lies along the upright, which was flattened and is held to it by a sliding wire ring. The traction windlass may be prepared to hold the extension straps in one of three ways: (1) A slot may be cut in the wire, the straps passed through and caught by a turn of the windlass. (2) Two small wire pegs may be inserted into the wire to fit into holes made in the straps. (3) The wire may be filed flat on one side where it crosses the foot piece, and a flat piece of steel fitted to this. The extension ends are then laid on the flat wire, the steel placed on top and caught at one end by a turn of fine wire. One turn of the windlass arm binds these together and prevents any further slipping.

The pelvic band is cut from sheet steel of the desired gauge (generally No. 10-No. 14), riveted on to the flattened end of the upright and bent to the desired shape. In the large splints it may be necessary to secure a firmer hold on the upright, in which case a tab of steel may be left on the band and this bent around to grasp the upright. Also the arms of the first pelvic band may be made only two or three inches long and a second pelvic band of the required length riveted to this. This gives a firmer band and prevents the perineal straps, when tightened, from drawing the arms together.

Thigh and calf bands are cut from thin sheet steel and fastened to the upright by boxes made from similar steel and riveted to the bands.

The splint may be lengthened at any time by cutting the upright in two, cutting a thread on each end, inserting a piece of gas-pipe of the required length and connecting by two gas-pipe joints.

Webbing or leather straps are riveted to the ends of the posterior pelvic arm, the thigh and calf bands, and buckles for these and for the perineal bands fastened at the proper places.

The pelvic, thigh and calf bands may be padded with felt or cotton batting and covered with canton flannel, forming a soft padding which may be easily changed when soiled.

The splint may be changed to a convalescent

FIG. 1. — METHOD OF FASTENING PELVIC BAND AND UPRIGHT.

splint by removing the foot piece and substituting a piece of gas-pipe ending with a joint into which a piece of rubber or a rubber cork has been inserted.

FIG. 2. — METHOD OF FASTENING CALF AND THIGH BANDS TO UPRIGHT.

This splint has been in use in the wards and on young children in the Out-Patient Department of the Children's Hospital, Boston, since March and so far has proved satisfactory. The cost as made in the hospital shop ranges from two dollars and a half to three dollars and a half. Of this, the material costs seventy-five cents to a dollar according to the size. The weight of a 30-inch splint is about eighteen ounces.

Medical Progress.

PROGRESS IN THORACIC DISEASE.

BY JOHN W. BARTOL, M.D., BOSTON.

INFLUENCE OF WIND ON PHTHISIS.

GORDON¹ has studied the distribution of phthisis in certain districts of Devonshire, and concludes that there is justification for the belief that strong, wet winds, when prevalent, have a marked influence in raising the death-rate from phthisis in communities exposed to them, and that this effect is possibly explained by the chilling and depressing nature of the winds and their tendency to excite bronchial catarrh in the inhabitants of such districts.

CONSUMPTIVE CHEST NOT FLAT.

Hutchinson² has followed up his preliminary investigation published in 1897, and feels more than ever convinced that the tuberculous chest is round rather than flat, or in other words that prevailing belief and teaching is entirely erroneous. The human chest, with a few exceptions easily accounted for, is the only one in the animal kingdom in which the transverse diameter is the longer, a relation obviously explained by the erect position and the locomotive necessities of the anterior limbs. Measurements taken of series of normal chests show the index of proportion of antero-posterior diameter to transverse to be approximately 70%; in the embryo the index runs up to 105-115, while at two years it is about 94, and from three to seven averages 85. In the tuberculous chest the average of the measurements thus far taken is not far from 80, or, in other words, a persistence of the type normal for the age of fifteen to eighteen years. The apparent flatness of tuberculous chest is an optical delusion due to the condition of round shoulders, and this in turn is the result of the forward displacement of scapulae on a thoracic wall which is barrel-like instead of flat.

Conclusions of importance are that the existence of such a conformation in a person past the age of eighteen is a sign of arrested development; that it is likely to be precedent to tuberculousis; that systematic measurements should be made in growing children, and flatness of chest favored by appropriate exercises.

¹ Brit. Med. Journ., May 23, 1903.

² Journ. Am. Med. Ass., May 2.

TRAUMATIC PERICARDITIS, ENDOCARDITIS AND MYOCARDITIS.

Pleasants³ concludes that trauma is a much more important cause of disease of the heart than is generally supposed. Judging from the frequency with which pericarditis of any origin is overlooked, he thinks that the traumatic form exists many times unrecognized, and publishes two cases of his own, in one of which the somewhat startling assumption of injury by *contre-coup* is made. Endocarditis definitely shown to have developed in connection with serious injury to the thorax has occurred in one case of his own knowledge and in three other cases from the literature, and it is considered probable that in many instances an endocarditis developing some little time after an injury without other discoverable cause is due to the trauma. A myocarditis set up by trauma in a previously normal heart probably does not attain a development sufficient to cause signs capable of demonstration, and if the heart was previously diseased, a supposed relationship between trauma and myocarditis must be very carefully probed before it is accepted as proven. Altogether five cases are reported which are considered above suspicion.

TIDAL PERCUSSION.

Colbeck⁴ complains not only that too little attention is paid to percussing the apices during both inspiration and expiration, but that a mistaken belief in regard to percussion changes produced by this manœuvre is very prevalent; in other words, contrary to general belief and for manifest anatomical reasons, there is above the clavicles in full inspiration a decrease in the limits of pulmonary resonance and in full expiration an increase of the same, while during the same intervals there is respectively a raising and lowering of percussion note. Investigations bearing on this point were reported eighteen months ago, and further study has simply served to confirm the opinion then formed.

LATE SYSTOLIC MITRAL MURMURS.

Hall⁵ considers that, when the murmur of mitral incompetence occurs not with but later than the first sound, there exists a marked degree of asynchronism, that the first sound is due to the earlier contraction of the right ventricle and that the later contraction of the left gives not a sound but a murmur. In some cases, however, he grants that the delay may be an apparent one due to the first part of the murmur being inaudible, and also admits as a possible factor the pulling in of the auriculo-ventricular curtains by the contraction of the papillary muscles, shown by Roy and Adami to be the final act in ventricular contraction.

³ Johns Hopkins Hosp. Bull., May, 1903.

⁴ Practitioner, March, 1903.

⁵ Am. Journ. Med. Sci., April, 1903.