Dr. Frazier, in closing, mentioned a case somewhat similar to that of Dr. Gibbon's, as an example of the improvement and apparent restoration of health which may follow gastro-enterostomies. The patient was operated upon about four years ago for a tumor at the pyloric end of the stomach, which was believed to be carcinoma. He was very much emaciated at the time, owing chiefly to obstructive symptoms. A posterior gastro-enterostomy was done and the patient rapidly gained in strength and weight, and was apparently wholly restored to health; consequently the lesion is believed to have been an ulcer, although there was a distinct mass which was quite palpable before the operation.

As to the terms partial gastrectomy and pylorectomy, he thought that the term pylorectomy might now be employed to include not only resection of the pylorus, but resection of the pyloric portion of the stomach, that is, up to the Hartmann-Mikulicz line.

The unfortunate results in the second case of gastrectomy may not have been due to the use of a Murphy button. It is only fair to say that the button used in this particular case was found upon its removal at the autopsy to have been imperfect in its construction and mechanism. Whether or not this defect was responsible for the accident it is impossible to say, although perhaps it would be only fair to give the button the benefit of the doubt.

STATED MEETING, HELD APRIL 1, 1907.

The President, Dr. John B. Roberts, in the Chair.

(*a*) CHRONIC PANCREATITIS RESEMBLING CARCINOMA; (*b*) A SERIES OF BREAST CASES, BENIGN AND MALIGNANT; (*c*) A SERIES OF GOITRE CASES.

Dr. William L. Rodman reported these cases, with presentation of patients. The first patient was a man of 56, first seen one year ago when he was suffering from jaundice and marked cachexia. He had lost 15 pounds and his symptoms were suspicious of carcinoma though no positive diagnosis was made. Opening the abdomen revealed in the head of the pancreas a densely hard mass large as a fist. This appeared to confirm the suspicion of cancer of that organ, but because of the possibility of chronic pancreatitis the gall-bladder was drained. The man was out of bed on the second or third day and made an unusually rapid and gratifying recovery, drainage being kept up for 3 or 4 weeks. In the light of the results, the case is regarded as one of chronic interstitial pancreatitis, probably due to the habits of the man, who used alcohol freely.

Benign Tumors of the Breast.—Dr. Rodman next presented three patients illustrating the results of plastic resection of the mammary gland for benign tumors. He was greatly impressed by Dr. Warren's description of this method at the meeting of the American Medical Association in Portland, and has since employed it in 17 or 18 cases, regarding 15 of which he has full notes. Two of the patients shown were the first and last of the series. All did remarkably well. The diagnosis of benign growth was made in each instance and there has been no recurrence or evidence of malignancy in any of them. It should be remembered, however, that one cannot always be absolutely sure, hence the clinical diagnosis should always be supplemented by microscopic examination of the removed specimen, as the majority of mammary tumors are malignant and all of them potentially so. One of the patients was

in the second month of gestation when operated upon for a fibroadenoma the size of a goose-egg, the largest one seen. Theoretically an incision in the lower part of the breast, and turning up of the organ, might interfere with its blood supply, but this objection does not hold good in practice, as the blood supply comes mainly from above. The incision is made along the line of junction between the gland and the thoracic wall. One might think this method applicable only to tumors in the lower quadrants of the breast, but in most of Dr. Rodman's cases the growth was in the upper and outer quadrant. Such tumors can be reached, as the breast can be turned upward to the clavicle. Functional activity and usefulness have been preserved in all the cases operated upon. The pregnant patient referred to was the sister of a prominent German surgeon, who insisted that this operation be done. Dr. Rodman is better pleased with the operation the more he uses it and believes that the profession too often sacrifices the breast. One has no right to remove that organ in those who use or expect to use it.

Malignant Tumors of the Breast.—A second series included three cases of malignant tumor of the breast. The first is interesting for two reasons. The patient was the youngest he has operated upon for this condition, 25 years at the time of the operation 3 years ago. A second point is that last year he operated upon her mother for scirrhus. The second patient was operated upon in 1900 for a large carcinoma of the left mamma. The third has had both breasts removed, the first one 5 years ago for malignant disease, the other 2 years ago for a benign growth. The patient was so informed regarding the latter, but insisted upon complete removal, which revealed a large cyst with a small area of solid growth. Other interesting cases could not be shown. One was operated on in 1897, another in 1898, both for scirrhus, and both were in perfect condition a few months ago; the first had been operated upon twice before. A third case had been operated upon in 1899 and two others in 1900.

Goitre.—Finally Dr. Rodman presented two patients upon whom he had operated for goitre, of which he has had 7 cases within 3 months, one a large mediastinal growth. The first patient has also a goitre on the left side which was not removed, she nearly dying under ether when the right half was extirpated,

it being necessary to stop the ether three times. The woman was pregnant when first seen, operation being postponed until after delivery. Pressure was evidently made by the growth of right side, as difficulty in breathing has passed away and the patient is in all ways better than she was. She was so anæmic that malignant disease was feared, but the microscope showed this not to be the case. Case second was that of a large goitre upon which operation was deferred for a few weeks until the patient, who was profoundly anæmic, had been put in good condition. One of the silk ligatures has lately given some trouble, this being the only one of buried Pagenstecher ligatures, of which he uses 25 to 50 in each case, to cause any difficulty. A piece of the thyroid the size of the end of a finger was left. The patient has since gained eight pounds, a gratifying result. Dr. Rodman has never removed a goitre under cocain, as he is certain general anæsthesia is not so dangerous as many believe it to be. He would hesitate to attack such large goitres under local anæsthesia. He employs ether and puts the patient in the reversed Trendelenburg position, this aiding very markedly in the control of hæmorrhage.

Dr. Henry R. Wharton expressed his interest in the question of removal of non-malignant growths of the breasts. He has employed this method of turning up the breast in a few cases of small growth. The operation was first recommended by Thomas, of New York, and is very satisfactory, permitting removal of the tumor with little resulting scar.

Dr. Frazier said that he had used the Warren incision quite recently in two cases. In both instances the tumors were cystic and not solid. The first one proved to be a galactocele, the sac of which was dissected out in toto. In the second case a cyst of considerable size was exposed and removed through the same incision. Microscopic examination of the tissue adjacent to the cyst demonstrated the fact that the cyst removed was only a part of a general cystic mastitis. When this was discovered a second operation was performed, at which the entire breast was removed, together with a mass of enlarged glands near the anterior axillary fold. He was afraid upon finding these glands that a mistake might have been made in the diagnosis, but subsequent histological study proved that they were not malignant.

Dr. John H. Gibson said that until he witnessed Kocher's

operations upon goitre he thought his own failure to relieve pain with infiltration anæsthesia in these cases was due to a faulty technique, but that now he thinks this was not the case. Kocher's local anæsthesia consists entirely in an anæsthesia of the skin; the rest of the operation is carried on practically without an anæsthetic, and can only be borne by the Swiss peasants. Kocher himself admits that in the more highly cultivated and organized patients he is obliged to use a general anæsthetic.

MULTIPLE FRACTURES.

WITH AN ANALYSIS OF 240 CASES AND A REPORT OF SIX PATIENTS WITH MULTIPLE FRACTURES OF THE UPPER EXTREMITY.

BY ASTLEY P. C. ASHHURST, M.D.,
OF PHILADELPHIA.

VERY little is to be found in systematic works on surgery on the subject of multiple fractures; and, though there have been isolated reports of such cases, the subject, it seems to me, has not received the attention which it deserves. My own attention has been called to it from the unusual experience of having under observation at the Episcopal Hospital during less than five years, six patients with multiple fractures involving one upper extremity.

Malgaigne, almost alone among the writers of special monographs, consecrates some paragraphs to the questions of the frequency and prognosis of cases of multiple fractures. Among 2358 fractures from the records of the Hôtel-Dieu, he found 30 cases of multiple fracture, or 1.28 per cent. of the whole number. Among 5057 fractures which have been treated at the Episcopal Hospital within the last five years (1902–1906 inclusive), I have found records of 73 instances of multiple fractures, or 1.44 per cent.

According to Bruns, a series of 124 cases of multiple fractures was collected by Weber, Moritz, and Leisrink. Bruns found that among these patients the mortality was 40 per cent., no cases, of course, being included in which the original injury produced immediate death. The rarity of multiple fractures is due to this very fact, that so many patients die almost immediately after the injury. Among the 73 cases at the Episcopal Hospital, there were 20 deaths, a mortality of 27.4 per cent. In calculating this percentage, not only have cases of crush of the extremities, calling for immediate amputation, been excluded from the list, but those patients admitted in a state of

profound shock, and dying in a few hours without reaction, have also been omitted; so that I think it is fair to conclude that 27 per cent. is close to the true mortality at the present day from multiple fractures themselves, without the added deaths that would be attributed to lesions of the brain and internal organs.

For the sake of comparison, the mortality of fractures in general may be seen from the following figures, which show that multiple fractures are just about ten times more dangerous than others:

PROTESTANT EPISCOPAL HOSPITAL, CASES OF FRACTURE 1902–1906.

Year.	Cases.	Recovered.	Died.	Mortality per cent.
1902	943	910	33	3.5
1903	927	899	28	3.0
1904	954	931	23	2.4
1905	1114	1088	26	2.3
1906	1119	1094	25	2.2
Total	5057	4922	135	2.7

Multiple fractures in general may be conveniently classified in three groups, as follows: I. Fractures of the skull or trunk and the extremities; *e.g.*, of the pelvis and the thigh, of the skull and the arm, of the spine and the foot, etc. II. Fractures of different extremities, including (*a*) Similar fractures, *e.g.*, of both legs, of both forearms, of both clavicles, etc.; and (*b*) Dissimilar fractures, *e.g.*, of the leg and the forearm, of the arm and the thigh, of the thigh and the opposite leg, etc. III. Multiple fractures confined to one extremity, as of the femur and one or both bones of the leg; of the humerus and one or both bones of the forearm, etc.

It is not usual to consider a fracture of two or more parallel bones, as of the ribs, or both bones of the forearm, or of the leg, as an instance of multiple fracture; still less should a comminuted fracture, or even a multiple fracture of a single bone, be so considered. The latter injury is more correctly designated as a double fracture, a triple fracture, etc.

The accompanying table gives the distribution in 240 cases of multiple fractures, which have been collected from the following sources: Malgaigne, 30 cases; Index Catalogue of the Surgeon-General's Office, Series I, 100 cases; Series II, 37 cases; Records of the Episcopal Hospital, 73 cases.

DISTRIBUTION OF MULTIPLE FRACTURES.

	Malgaigne.	S.G.O.,I.	S.G.O.,II.	P. E. H.	Total.	Per cent.
I. Skull and extremities	7	13	8	11	39	16.25
Trunk and extremities	3	38	6	10	57	23.75
Skull and trunk	1	8	3	1	13	5.41
Trunk alone	0	5	3	2	10	4.20
II. Different extremities:						
Similar lesions	10	6	6	7	29	12.08
Dissimilar lesions	6	20	9	35	70	29.16
III. One extremity:						
Upper extremity	0	7	1	7	15	6.25
Lower extremity	3	3	1	0	7	2.90
Total	30	100	37	73	240	100.00

In addition to the above cases, Dr. W. J. Taylor and Dr. H. R. Wharton have each reported a case of such extensive multiple fractures that they deserve a class to themselves. Dr. Taylor's patient, who recovered, had in the left upper extremity fractures of the humerus through the surgical neck and through the middle of the shaft, and also of the radius and ulna close to the wrist; while in the right upper extremity she had a T-fracture involving the condyles of the humerus, a fracture of the radius and ulna in their upper third, and of the radius in its lower third. Dr. Wharton's patient, besides a compound fracture of the nose, had a fracture of both bones of each forearm, and a fracture of both thighs; he did well for a week, and then died rapidly, possibly of fat embolism.

The mortality of the various combinations of fracture may be seen in detail in the following analysis of the Episcopal Hospital cases:

MORTALITY OF MULTIPLE FRACTURES AT THE EPISCOPAL HOSPITAL, 1902–1906.

	Total.	Rec.	Died.	Mortality per cent.
I. Of skull or trunk, and extremities:				
1. Skull and { Upper extremity..	6	6	0	.....
1. Skull and { Lower extremity..	5	2	3	60.00
2. Trunk and { Upper extremity..	8	3	5	62.50
2. Trunk and { Lower extremity..	2	1	1	50.00
3. Skull and trunk	1	0	1	100.00
4. Trunk alone.....	2	2	0	.....
II. Of different extremities:				
1. Similar Lesions:				
Both forearms.....	3	3	0	.....
Both femora	2	0	2	100.00
Both legs	2	2	0	.....
2. Dissimilar Lesions:				
Upper and lower extremities.	20	15	5	25.00
Both upper extremities.....	6	6	0	.....
Both lower extremities.....	9	7	2	22.50
III. Confined to one extremity:				
Upper extremity	7	6	1	14.30
Lower extremity	0	0	0	.....
Total.....	73	53	20	27.4

The great amount of violence which attends the production of all these fractures makes the prognosis necessarily grave, and renders the prospect of recovering useful limbs more dependent upon the character of the injury than upon the treatment employed. When the head or trunk is involved, the injury is more apt to be due to a fall from a height, or to the patient being caught in machinery and tossed against the walls of the room. It is often due to the patient being struck and thrown by a locomotive or a trolley car. In the second class the patient is more apt to have been injured by a crushing force, as the passage of a wheel over the extremities, or the fall of a heavy beam. In the third class, which is the smallest of all, and to which all of the patients reported to-night belong, falls and machinery accidents hold about equal place. In the 18 examples of this injury which it has been possible to find recorded, the cause in 4 is unknown; in 7 the patients were caught in revolving machinery, in 5 they were injured by falls,

and in 2 the accident was due to their being knocked down, run over, and dragged by moving vehicles.

In such severe injuries as these it is frequently impossible to do more for the patients when they are first admitted than to combat the shock. Thus in one of the cases reported to-night, reduction of a dislocated hip was not accomplished until the third day after admission; and in another patient over three weeks elapsed before his precarious condition made it seem advisable to have him removed to the second floor for skiagraphic examination. It is on this account that accurate coaptation of the fragments cannot always be obtained, as well as for the reason that the injuries to the soft parts are often of more pressing importance.

The chief difficulty in the treatment of multiple fractures involving the upper extremity consists in the fact that many of these patients are necessarily confined to bed for a number of weeks after the injury, and that therefore deformity in the humerus is hard to prevent, since the weight of the forearm, which is available in the ambulatory treatment of fractures of the humerus, cannot be used when the patient is confined to bed. This fact, together with the absolute obliteration of all landmarks from œdema, was the cause in Case I of the projection of the lower fragment at the shoulder joint, so as nearly to penetrate the skin, necessitating excision. In Case III the muscular contraction was so violent and spasmodic that even the use of weight extension to the lower fragment of the humerus, while the patient was in bed, suggested by Dr. Hutchinson, together with heavy shot bags over the seat of fracture, was not sufficient for a long time to keep the fragments in position.

In spite of the gravity and extent of the injuries, if once the patient survive the immediate effects of the accident, there is no good reason why union of the fractures should not occur, and the limbs prove eminently useful. Indeed, Dupuytren contended that the very multiplicity of the fractures tended to promote rapid healing, since the pain, discomfort, and inflammatory reaction are distributed among many parts, instead

of being concentrated in one: somewhat upon the same principle, I suppose, that it is said a man does not feel the dentist treading on his toe while his tooth is being pulled. Dupuytren says (I quote from Packard's translation of Malgaigne) "that the danger of wounds and fractures, although doubtless increased by an increase in their number, is still not in direct ratio with that number. At first sight, one would presume that several fractures complicating one another would naturally react unfavorably, each one thus giving rise to graver symptoms than if it had occurred alone. Now, the contrary is true; when there are several fractures, each one induces slighter symptoms than if it were by itself; and Dupuytren, after at first viewing this fact with astonishment, became assured of it, and looked for it subsequently, as natural and to be expected." These remarks of Dupuytren prove the correctness of that saying of Heister: *"In prædicendis fracturarum eventibus magna utique chirurgis opus est circumspectione."*

I am indebted to my chiefs at the Episcopal Hospital for permission to report the following cases. The first four, in the services of Drs. Neilson, Deaver, and Harte, came under my care as resident; and the two last were treated this winter in the out-patient department:

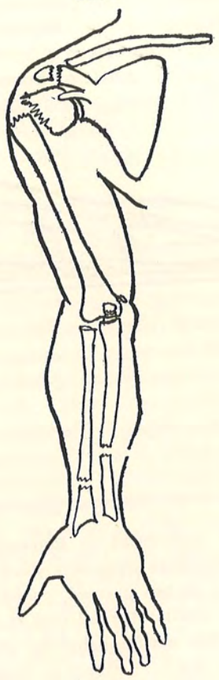
Case 1.—Michael C., 15 years (P. E. H. No. 867), admitted May 6, 1902, had fallen 40 feet from the side of a ship where he was at work, landing on the dock. *Diagnosis:* Fracture of both bones of forearm, in lower third (compound of ulna); fracture of olecranon; fracture of internal epicondyle of humerus; high fracture of surgical neck of humerus; fracture of acromion process of scapula; shock. The fractures all involved the right side. The dressing consisted of a Bond splint, an axillary pad and a shoulder cap of binder's board; the arm was bandaged to the chest, the elbow being extended and the forearm in supination. The dressings were changed every other day at first, owing to the very great œdema. Ice-caps were applied to the arm from shoulder to elbow. The œdema in a few days became so great that it was uncertain whether gangrene might not ensue.

May 11.—The œdema is less. The wound of compound fracture of ulna is healing.

May 22.—Union progressing. Bone projecting beneath skin of shoulder thought to be comminuted acromion. Shoulder very black and blue. No landmarks palpable yet.

May 29.—Anterior obtuse angled splint, and posterior straight splint to forearm. Binder's board shoulder cap as before.

Fig. 1.



Case I.—Fracture of acromion, of surgical neck of humerus, of internal epicondyle, of olecranon, of radius, and compound fracture of ulna.

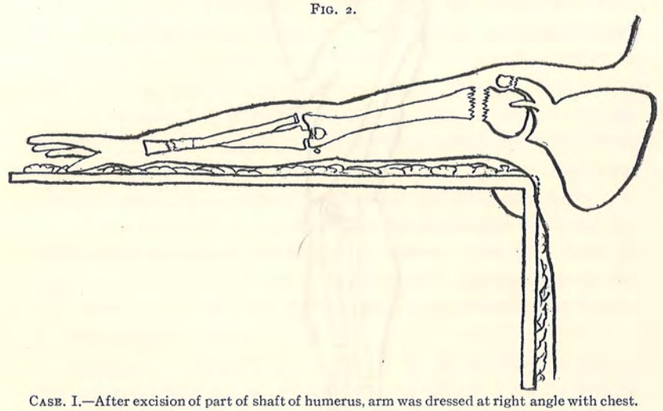
Union apparently firm throughout. At normal site of coracoid process, below clavicle, is a bony prominence, apparently too large for coracoid, but it seems hardly possible that it is the head of humerus in subclavicular dislocation. The comminuted acromion moves with, and seems immovably fixed to shaft of humerus.

June 1.—Skiagraph of shoulder joint shows high fracture of surgical neck of humerus, upper end of lower fragment almost jutting through skin below acromion. The head of humerus is apparently in glenoid cavity. (Fig. 1.) Out of bed in wheel-chair.

June 3.—Walking about ward. Four weeks since injury.

June 5.—*Operation:* Partial excision of right humerus, by Dr. Thomas R. Neilson. Ether. Incision in line of deltoid fibres from acromion down about 5 inches. Muscular fibres separated and bone bared. Shaft of humerus united by fibrous

FIG. 2.



CASE. I.—After excision of part of shaft of humerus, arm was dressed at right angle with chest.

union in malposition with head of humerus. Fracture below anatomical neck. Fragments separated, shaft turned out through wound, and about 1½ inches excised, subperiosteally, with saw and nippers. End of shaft returned and fractured parts put in good position. This was accomplished by abducting the arm to a right angle with the body. (Fig. 2.) Iodoform gauze drain, silkworm gut sutures. Arm dressed in semipronation, and held at right angles with body by long right angled splint. Short posterior splint to forearm, and shoulder cap of binder's board.

June 6.—Dressings reinforced on account of bloody ooze. Much pain all night, none to-day.

June 9.—Dressed. Parts in excellent condition; about half

of gauze drain removed. The fractures of forearm show slight anterior bowing. No special dressing for olecranon.

June 12.—Dressed. Drain entirely removed. No oozing.

June 15.—Dressed. Looped stitch at site of drainage tightened. All other sutures removed.

June 19.—Arm put at angle of 45° with body, with acute angled anterior splint in axilla. Slight anterior prominence of head of humerus corrected by a pad.

June 22.—Out of bed. While in bed lay very quietly on back. The best patient I ever had.

June 24.—Dressed with obtuse angled internal angular splint. Considerable pain in flexing elbow to this extent—about 135°.

June 30.—Dressed with right angled internal angular splint (Physick splint).

July 2.—Fergusson's dressing for fractures about shoulder. No splint to forearm, which is carried in bandage sling at wrist.

July 3.—Discharged cured; to return to Dispensary for occasional dressings.

February 20, 1907.—Returned in answer to letter. All functions of upper extremity are perfect, including rotation of forearm, and external rotation of humerus. From the left acromion to the head of the radius measures 29.5 cm. On the injured side the distance is 26.5 cm. There is no visible or palpable deformity anywhere. The patient, now a grown man, does heavy laboring work, and would not know his arm had ever been injured, except that it is a little shorter than the left, and he is therefore obliged to have his clothes made to order.

CASE 2.—E. B., 38 years (P. E. H. No. 1083), admitted June 1, 1902, was a fireman, and had fallen from a ladder. The height is not known. *Diagnosis:* Fracture of radius in lower third, fracture of the olecranon, and high fracture of surgical neck of humerus, all on the right side. *Dressing:* A straight anterior and short dorsal splint to forearm, the fracture of humerus being masked by great swelling.

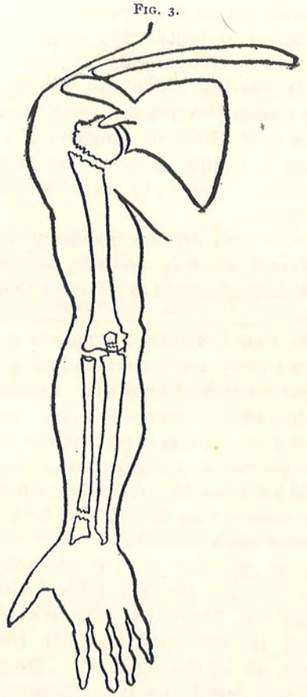
June 5.—Skiagraph shows fracture of shoulder. Dressed with long straight anterior splint, from axilla to finger tips, and short dorsal splint to forearm, which was held in semipronation; shoulder cap of binder's board, and arm fastened to chest by broad binder. Lies on back very quietly. Redressed from time to time.

July 2.—Out of bed, elbow still in full extension.

July 3.—Obtuse angled internal angular splint applied; short posterior splint to forearm, and shoulder cap.

July 5.—Right angled internal angular splint, other dressings as before.

FIG. 3.



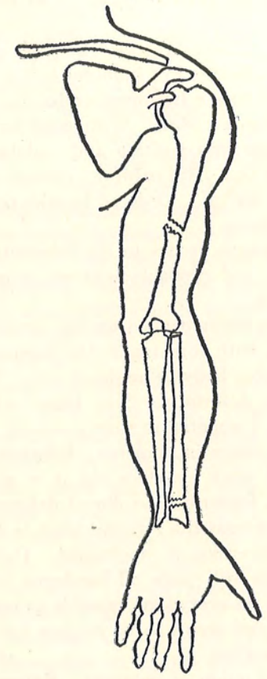
CASE II.—Fractures of surgical neck of humerus, of olecranon, and of radius.

July 7.—Fergusson's dressing applied. Over 5 weeks since injury; all fractures firm, little deformity. Discharged.

It has been impossible to trace this patient.

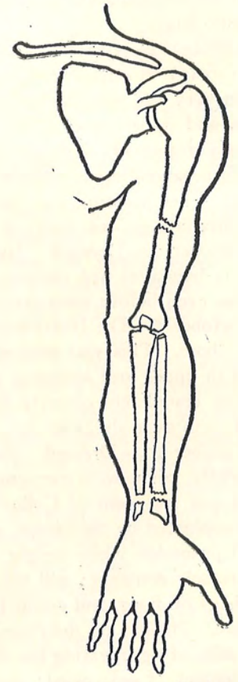
CASE 3.—J. C., 38 years (P. E. H. No. 2029), admitted September 27, 1902, was a pipe-fitter, and fell 40 feet from scaffolding, striking earth with left arm and shoulder. No unconsciousness. On admission: mind clear, considerably shocked. *Diagnosis:* Fracture of humerus below insertion of deltoid, and Colles's fracture of radius, both on left side; dislocation of right femur into ischiatic notch, where head of bone is easily felt:

FIG. 4.



CASE III.—Fracture of L. humerus below insertion of Deltoid, and Colles's fracture of L. radius. (Also dislocation of R. hip.)

FIG. 5.



CASE IV.—Fracture of L. humerus below insertion of Deltoid; Colles's fracture L. radius, and fracture of L. ulna, lower fifth.

shortening 1½ inches, adduction, and inversion of the affected limb. Deformity of fractures easily corrected by extension and manipulation. *Dressing:* Bond splint to forearm; short internal splint to humerus, with shoulder cap of binder's board. Dislocation of hip not reduced on account of shock.

September 28.—Patient has reacted well. Under ether an unsuccessful attempt made to reduce dislocation by flexion and circumduction.

September 30.—Dr. Harte, with Drs. Neilson and Deaver in consultation. Patient again etherized, and hip successfully reduced by manipulation and vertical traction. Buck's extension and sand bags.

October 1.—Arm dressed. Colles's fracture in good position, forearm in semipronation. Fracture of humerus below deltoid in very bad position indeed, lower fragment drawn up into axilla, and upper jerking out against skin. With considerable difficulty fragments were brought into position and maintained with firm bandaging of shoulder cap. Hip painful. Patient very restless. Temperature 100° to 101° F. Ordered to take potassium bromide, gr. xx, every 3 hours.

October 4.—Dressed. Humerus recurs to its deformity as soon as bandages are removed, and probably was not in good position even before unbandaging.

October 5.—Dr. Hutchinson recommended weight extension from elbow. This was applied, with forearm in full pronation, and with upper arm abducted from body to angle of 45°. This dressing completely corrects the deformity. Shot bags laid on top of arm, over shoulder cap. Temperature nearly normal.

October 10.—Dressed. No union in humerus; deformity is apparently fairly well corrected when shoulder cap is in place. The upper fragment of Colles's fracture is in dorsal deformity, being supinated by the biceps, whereas the forearm must be kept in full pronation while weight extension is maintained. Patient is extremely contrary; will not lie still, pulls off bandages, kicks sand bags on floor, and seems to do everything possible to retard his cure. He has no delirium, and seems to be restless for the mere sake of aggravating his disorder.

October 17.—Dressed; some union of humerus. Extension to arm continued. Deformity less. Patient very much quieter. Hip extension removed. Three weeks since injury.

October 24.—Dressed. Four weeks since injury. Radial union good; position good; wrist a little stiff. Lower fragment of humerus still tends to draw upwards and inwards. Patient of model deportment.

October 31.—Extension removed from arm. Five weeks since injury; 26 days since extension was applied to arm. Union in humerus quite firm. Little visible deformity; fair amount of callus. Arm brought in to side of chest; Bond splint left off; elbow flexed with difficulty to nearly a right angle; and a modified Fergusson's dressing applied. During use of extension to humerus, forearm was at angle of about 105° with arm, and elbow is now quite stiff. Sitting up makes patient faint and giddy. Right knee and leg feel somewhat numb. Functions normal, no pain at hip.

November 14.—Soon after last note got out of bed, and to-day was discharged.

February 19, 1907.—Returned in answer to letter. Still employed at Cramp's ship-yard, and says his arm is perfectly useful. There is no noticeable deformity. There is 0.5 cm. shortening in the fractured humerus, none in the forearm. No callus felt anywhere. Can completely extend elbow, but flexion beyond 80° is impossible. Pronation of forearm is complete, but supination is only about three-fourths complete—that is to say, there is rotation of about 135° instead of 180°.

Case 4.—A. W., 65 years (P. E. H. No. 2387), admitted November 12, 1902, fell against the steps of the house where she lodged, while intoxicated. History of accident is incomplete. *Diagnosis:* Fracture of humerus below insertion of deltoid, Colles's fracture of radius, fracture of ulna in lower fifth—all on the left side; acute alcoholism, general contusions, acute bronchitis, lacerated wound of left eyebrow. *Dressing:* Bond splint, forearm in full supination; elbow extended; shoulder cap, axillary pad, arm bandaged to side. Lies on back in bed.

November 14.—Developed delirium tremens.

November 15.—Dressed. Fractures in fairly good position.

November 17.—Dressed. Delirium tremens worse.

November 29.—Pulse failing.

December 1.—Chill. Temperature 105.6° F.

December 2.—Diffuse bronchitis. Dressed.

December 6.—Stuporous. Temperature 101° F.

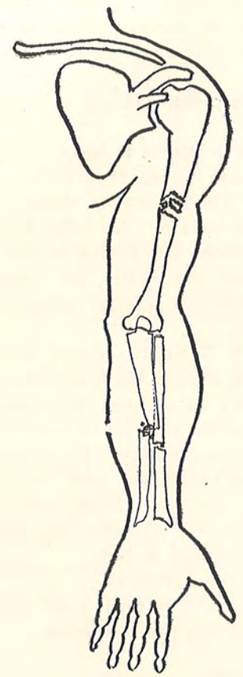
December 7.—Uræmic. Urine very scanty. Temperature 103.4° F. Fractures united in good position.

December 11.—Died. Temperature 108° F.

Case 5.—H. D. E., 57 years (P. E. H. No. 3579), admitted November 26, 1906. Was knocked down and run over by coal

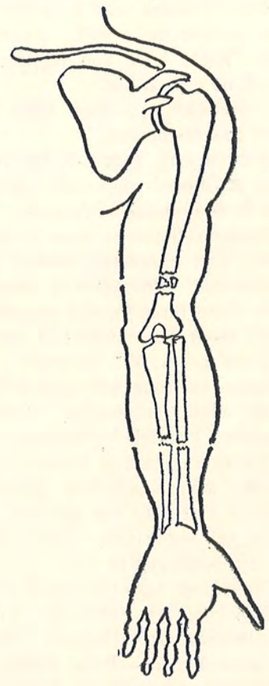
wagon, while intoxicated. Admitted in semi-conscious condition. *Diagnosis:* Lacerated scalp, comminuted fracture of left humerus above insertion of deltoid; compound comminuted fracture of both bones of left forearm in middle third. Seen in Dispensary 5 days later, with no union of any of the fractures, overlapping of fragments of humerus, and deformity of forearm. Forearm was dressed in full supination, with long palmar and short dorsal splints; moulded coaptation splints of binder's board to humerus, with shoulder cap of same material, and arm bandaged to chest.

FIG. 6.



CASE V.—Comminuted fracture of L. humerus, above insertion of Deltoid; compound comminuted fracture of both bones of L. forearm.

FIG. 7.



CASE VI.—Compound comminuted fracture of L. humerus, lower third; compound fracture of both bones L. forearm.

Wrist supported by sling. Progress of case uneventful. Forearm alone was redressed December 10, and whole upper extremity redressed on December 13. All fractures were then found to be knitting. Redressed December 20 and December 27, on which latter date all fractures were found solid. There was considerable deformity from œdema below elbow, and apparently some outward bowing of bones of forearm. Only the long palmar splint and the shoulder cap were replaced.

January 5.—Dressed. Long splint on ulnar side of forearm, short dorsal splint, and a third splint on external (radial) surface, to overcome the outward bowing.

January 8.—Œdema much less. Lower fragment of radius apparently united to upper fragments of both radius and ulna, leaving lower fragment of ulna partially ununited. Same splints continued. Skiagraph made laterally shows some dorsal displacement of both lower fragments.

January 15.—Ulna seems firmer.

January 22.—Radius very firm. Skiagraph made anteroposteriorly confirms notes made January 8.

February 1.—Ulna is decidedly firmer. Rotation of about 45° from full supination. Only long dorsal splint continued.

February 12.—Referred to Orthopædic Hospital (Dr. G. G. Davis) for massage and passive motion.

February 23.—Can almost make a fist. Rotation a little more extensive. To continue treatment.

March 25.—Has been working as usual, for some weeks, at saw-making. Finds little disability from injury. There is considerable deformity in forearm, the bones being bowed to radial side. Rotation a little more extended. Can make a fist. Strength is normal.

CASE 6.—A. M., 14 years (P. E. H. No. 3860), admitted December 22, 1906. Caught in belting, carried around and thrown to ground. *Diagnosis:* Compound comminuted fracture of left humerus in lower third; compound comminuted fracture of both bones of left forearm at junction of middle and lower third. Seen in Dispensary nine days later. Some union in forearm, but both bones were bowed to ulnar side. No union in humerus, the lower fragment being drawn up and back by triceps, upper fragment being pulled forward and in by deltoid and muscles of axillary folds. Dressed precisely like Case 5.

January 9.—Dressed. Position of all fragments excellent. Wound over inner surface of humerus healing, that over ulna scabbed. Fair union in all fractures.

January 16.—Dressed. All fractures firm. Moderate amount of callus over humerus; wounds all healed solid. Rotation of forearm from full supination to mid-pronation good.

January 23.—Dressed.

January 30.—Dressed. Long dorsal splint and shoulder cap only. All fractures solid, and motions good.

February 6.—To wear only a handkerchief sling. All functions perfect, except extension of elbow, which is possible only to 140°.

February 16.—Elbow can be extended to 150°.

March 2.—Arm normal in every respect, but elbow can be extended only to 165°, owing to callus around comminuted fracture of humerus.

N.B.—Patients 1, 5 and 6 were exhibited to the Philadelphia Academy of Surgery, April 1, 1907.

For the sake of completeness the following abstracts of cases of multiple fractures confined to one upper extremity are added. These, with the six original cases just reported, comprise all examples of this injury it has been possible to find.

7. Alquié (Gaz. Méd. de Montpel., 1846–1847, vii, 84). Fracture of clavicle and humerus. (Access has not been had to this journal.)

8. Blum (Arch. Gén. de Méd., 1887, xx, 214). Patient caught in revolving wheel: compound comminuted fracture of left humerus, fracture of left radius, and compound fracture of left ulna. Shoulder joint amputation on third day for traumatic emphysema. Recovered.

9. Davis, G. G. (Records of Episcopal Hospital, Phila., No. 320 of 1906). Male, 14 years, caught in revolving machinery. Admitted January 27, 1906. Shock; transverse fracture of left humerus in lower third, fracture of both bones left forearm in upper third, compound fracture of both bones left forearm in lower third, compound fracture of several fingers. Dressed on posterior splint; irrigation for 1 week. Recovered with good rotation of forearm, and flexion and extension of elbow. Discharged March 8, 1906.

10. Green (N. Y. Med. Record, 1880, xvii, 538). Caught in a revolving wheel: fracture of left humerus through surgical neck and in lower third; fracture of left ulna in upper third; compound fracture of left radius and ulna in lower third. Dressed in plaster of Paris; elbow in full extension for a week, then flexed to right angle. Recovered with good functions.

11. Laborie (Bull. Soc. de Chir. de Paris, 1866–1867, 2 sér., vii, 297). Patient seen 3 months after injury, which had produced multiple fractures of right scapula, clavicle and humerus, and a posterior dislocation of right shoulder. Fractures all had united except in humerus, where false joint persisted.

12. Mariani (Rev. de Med. y Cirug. práct., Madrid, 1882, vi, 110). Double comminuted fracture with wound of forearm and arm. (Access has not been had to this journal.)

13. Nicholls (Lancet, 1873, i, 877). Knocked down and dragged by horses: fracture of left humerus above deltoid, compound fracture below deltoid; posterior dislocation of left elbow, and fracture of both bones left forearm in middle third. Dressed in full extension for three days; splints then abandoned on account of œdema. Recovered with much deformity and poor function.

14. Packard (Internat. Encyclop. of Surg., Ashhurst, Revised Ed., N. Y. 1888, V. iv, p. 18). Male, 22 years, caught around a revolving shaft: fractures of humerus, radius, ulna, and metacarpus. Recovered with almost perfect functions.

15. Pezevat (Jour. Compl. du Dict. des Sc. Méd., Paris, 1831, xl, 276). Caught in revolving wheel: fracture of left clavicle, posterior dislocation of left elbow, and fracture of both bones of left forearm in lower third. Arm laid on pillows; recovered with fair function.

16. Robertson and Fifield (Bost. Med. and Surg. Jour., 1877, xcvii, 570). Fall; fracture of right humerus above condyles, Colles's fracture of right radius. Dressed in full extension: good recovery.

17. Schwartz (Bull. et Mém. de la Soc. de Chir. de Paris, 1904, xxx, 1102). Fracture of surgical neck of humerus, and fracture of lower extremity of radius. Plaster cast to forearm; and on sixteenth day after injury weight extension to humerus. Union reported progressing.

18. Since the above was written there has been admitted to the Surgical Dispensary of the Episcopal Hospital, another patient with multiple fractures of the upper extremity, for notes of which I am indebted to my Resident, Dr. Price. Male, 20 years, was caught in a revolving shaft on March 16, 1907. He sustained fractures of the left humerus in lower third, and of both bones of left forearm in middle third. He was treated precisely as were Cases 5 and 6: progress satisfactory.

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Bruns. Die Lehre von den Knochenbrüchen, Stuttgart, 1886 (Deutsche Chirurgie, Lieferung 27), S. 116.
Dupuytren. Gazette Médicale, 1832, iii, p. 394.
Malgaigne. Treatise on Fractures (Packard), Philadelphia, 1859, p. 76.
Taylor (W. J.). Times and Register, Phila., 1893, xxxvi, 387.
Wharton (H. R.). Times and Register, Phila., 1893, xxxvi, 388.

Dr. John H. Jopson cited a case of multiple fractures treated in the Presbyterian Hospital as an illustration of the shock that

results from such injuries. An Italian was thrown from a wagon and sustained a fracture of the pelvis, the shaft of the humerus, one or both clavicles, and a Pott's fracture. The fracture of the humerus was complicated by paralysis of the musculo-spiral nerve. Shock was great and prolonged, but the patient made a good recovery. There is now under his care in the Children's Hospital a child referred because of supposed rachitic deformities, who was found to have a fracture of the right thigh, both bones of the right leg, and both bones of the left leg, evidently of rachitic origin, and with no history of traumatism. All surgeons are familiar with multiple fractures due to carcinoma. In Dr. Jopson's experience, the double Colles's fracture is the commonest example of multiple fracture encountered.

Dr. George G. Ross mentioned two cases of multiple fractures. One was in a woman of 65, weighing 250 pounds, and included a fracture of the middle of the shaft of the right humerus, a Colles's fracture of the right side and a Colles's fracture of the left side. The patient recovered. The second case was a multiple fracture of the upper extremity, including a fracture of the middle of the humerus and what corresponded to a Colles's fracture on the same side, though there had previously been a fracture in that location. The man was violently drunk and no history could be obtained. There was great trouble in controlling the upper fracture.

Dr. William J. Taylor cited the case of a woman who had a fracture of one patella wired by another surgeon and afterward came to him with a fracture of the other patella. He wired that one, but soon after recovery the woman got drunk and refractured it, the bone breaking at the line of union and also in three other places. It was again wired, but the woman again got drunk and fractured the patella a third time.

Dr. Richard H. Harte said, regarding the question of repair in these cases, he has noticed in a number of instances that nature appears capable of carrying on only a certain amount of repair; that is, multiple fractures do not unite so quickly as do single fractures. When three bones are broken some one of them will remain practically without union until the others have united, and will then unite in the ordinary manner. It might be said that something was between the fragments preventing union, but that is not the case; the tissues simply lie dormant while the

others are healing, and then union promptly occurs. He is surprised that such a close observer as Dupuytren should state that multiple fractures unite as readily as does a single fracture.

Dr. Ashhurst, in closing, said that Dr. Harte had apparently misunderstood his reference to Dupuytren's statements. The latter had referred to the union of multiple fractures with less inflammatory reaction in each than is ordinarily the case where only one fracture is present; and by inflammatory reaction Dupuytren no doubt understood the formation of excessive callus, as well as profuse suppuration, the latter of course being a much more prominent feature of compound fractures in Dupuytren's time than it has become since the general adoption of antiseptics. In Dr. Ashhurst's fifth case union did not begin in the forearm until that of the humerus was quite firm. Dr. Ashhurst thought the treatment adopted by Dr. Neilson in the first case reported was interesting in connection with the attempts now being made to secure union in ununited fractures of the neck of the femur without screw or wire fixation, by freshening the bone fragments and then dressing the thigh in a plaster cast in the position of extreme abduction. In the humerus thus treated (Case 1) firm union had occurred without difficulty, and in at least one case of fractured femur of which Dr. Ashhurst was cognizant, a patient under Dr. Davis's care, the same result was obtained.

RHINOPHYMA.

Dr. John H. Gibbon exhibited a case of rhinophyma upon which he had operated. The patient was 57 years of age. The condition had gradually developed in about 4 or 5 years. The lateral aspects of the lower portion of the nose were covered with large pedunculated masses of hypertrophied tissue. The whole lower half of the nose was involved, although over the central portion there were none of the pedunculated tumors.

Dr. Gibbon removed all of the hypertrophied tissue with a scalpel, shaving off the outer layers of the skin over the whole involved area. The bleeding was quite profuse and there was an escape of a large amount of sebaceous material from the divided ducts and glands. The bleeding was controlled simply by pressure. The patient left the hospital without a dressing at the end of a week, and in two weeks the entire area was covered by new skin.

GALL-STONES WITH SUBACUTE PANCREATITIS.

Dr. Edward B. Hodge reported the case of a man, aged 27 years, who was admitted to Dr. J. H. Musser's service at the Presbyterian Hospital October 30, 1906. Nausea, vomiting, sharp epigastric pain of 12 hours' duration. Subject to similar attacks for some years. Never had typhoid fever. Examination showed moderate distention, slight rigidity of upper right rectus, distinct tenderness in the epigastrium, most marked over gall-bladder. Pain extends to the left side, but not to the back or shoulder. Later, gall-bladder could be felt and slight transient jaundice developed. Highest temperature, 101.4°; pulse, 100; respiration, 20.

Two weeks later, after attack had subsided, operation was performed in Dr. DeForest Willard's service. Right rectus incision. Very extensive fat necrosis in omentum, mesentery, and subperitoneal fat. Collection of purulent material between gall-bladder, liver, and pylorus, amounting to about 2 oz. Gall-bladder not distended, and containing one large and a dozen small stones. Dense adhesions about gall-bladder, ducts, pancreas, and pylorus. No stones felt in common duct. Pancreas hard and head as large as a fist. Tube drainage of gall-bladder with gauze to abscess cavity and right kidney pouch.

Drainage never very free, but patient did very well until tube was removed at end of three weeks. Then followed fever, enlargement of liver dulness, and slight jaundice, subsiding in a week. This was followed by an attack of pleurisy at the left base and later by the discharge from drainage sinus of numerous pieces of necrosed tissue, reported from the laboratory as probably fat necrosis. This continued for several weeks with general condition poor. Exploration of sinus and aspiration of left chest negative.

Second Operation.—Incision through scar. Adhesions freed. Cystic duct followed down to junction with hepatic, and found kinked and strictured. Hepatic and common duct unobstructed. Cholecystectomy; tube drainage of hepatic duct through stump of cystic. Fat necrosis very much reduced, though some small areas still present. Pancreas reduced to nearly normal size. Condition on table very bad, but reaction took place. Drainage free. Later purulent bronchitis and septic nephritis developed, ending in death on the tenth day. No autopsy.

RUPTURED ECTOPIC PREGNANCY DURING TYPHOID FEVER.

Dr. F. O. Allen reported the case of a woman who was admitted to the Women's Medical Ward of the Presbyterian Hospital February 22, 1907, and came under the care of Dr. Musser. She was 32 years old, was married, and had been ill for three weeks. She had menstruated last at about the time she was taken sick. The case seemed to be one of typical typhoid fever, with an unusually large number and wide distribution of rose spots.

The second day after admission some tenderness was noted on the left side of the abdomen. At about five o'clock the following morning, the twenty-fifth day of her disease, she complained of severe abdominal pain, her temperature dropped to 98°, her pulse became more rapid and very weak (at times imperceptible), and her respirations increased in frequency. Intestinal hæmorrhage was suspected and she was treated accordingly. An examination a few hours later showed that abdominal breathing was restricted; the abdomen was slightly distended, but not tender; peristalsis was present; there was no loss of liver dulness; there was no dulness in the flanks. The Widal reaction was reported positive; the leukocyte count was 19,200. The temperature remained subnormal throughout the day. In the evening, the temperature rose again moderately; there was increasing tenderness of the abdomen; rigidity was not marked, but there was a distinct resistance, especially on the left side; she vomited; a bowel movement following an enema did not contain blood. Her general condition became very bad, but improved somewhat after copious injections of normal salt solution beneath the skin.

During the evening the patient was seen by Dr. Wharton, who agreed with Dr. Musser that operation was indicated, and that intestinal perforation was the condition probably present. The speaker was indebted to Dr. Wharton for the privilege of operating upon and reporting the case.

Operation was done twenty-one hours after the onset of acute abdominal symptoms. An incision was made through the right rectus muscle. The peritoneum showed black in the wound; when it was opened, large quantities of blood poured out. The ileum was drawn through the wound and inspected, but no perforation or other abnormal condition was found. On exploring the abdominal cavity, the pelvis was found filled with blood and clots, which were scooped out by the handful. A mass, the size

of a small lemon, was felt, springing, apparently, from the left Fallopian tube. The uterus was enlarged to about the same size and was soft. The small mass had a distinct pedicle, and at its upper pole there was a rupture into which the finger could be passed. The pedicle was ligated with silk, the abdominal cavity filled with salt solution, and the wound closed. The mass was a thin-walled sack filled with clot. No fœtus was found.

The patient's condition was considerably better during the following day, but the temperature soon rose and remained high, the lungs gradually became œdematous, and she died on the fourth day after operation.

A complete autopsy was not permitted, but the wound was opened and the peritoneal cavity examined. No signs of peritonitis or other intra-abdominal lesion were discovered; there had been no further hæmorrhage.

Dr. Henry R. Wharton said when he saw this patient the question was the differential diagnosis between hæmorrhage from an ulcer and perforation. An enema brought away no blood, hence perforation was considered probable, though it was noted that the pain was in the left side and that there was not marked rigidity of the right side.

Dr. John B. Deaver asked if a differential leukocyte count had been made in the case reported by Dr. Allen. He operated in one case which proved to be typhoid hæmorrhage, the blood being confined to the intestine. There was absolute rigidity. The small intestine was found to be filled with blood and was not opened. The patient recovered.

Dr. William L. Rodman cited a case in which typhoid perforation was diagnosed by two medical colleagues, who insisted upon operation, although he did not favor it. When the abdomen was opened hæmorrhage was found in the gut, but no perforation. The patient recovered from the operation, but died from a second hæmorrhage a number of days later. Autopsy showed there had been no perforation. If one opens the abdomen in these cases he is probably warranted under certain conditions in opening the intestine and searching for the bleeding point, but in general the chances are better if the hæmorrhage be allowed to take its course. There is not a large field for operation in typhoid fever and one is not warranted in opening the gut unless there are adhesions or thin places in the wall make the finding of the bleeding point reasonably sure after the opening has been made.

CARCINOMA OF THE BONES FOLLOWING CARCINOMA OF THE BREAST.

BY HENRY R. WHARTON, M.D.,
OF PHILADELPHIA,
Surgeon to the Presbyterian and Children's Hospitals.

Mrs. F., aged sixty-one years, consulted me in January, 1906, in regard to a tumor involving the left breast, which had been giving her some uneasiness for several months. Upon examination I found a distinct mass in the substance of the breast, which I considered carcinoma, and advised its removal. The breast was removed with axillary glands in February, 1906, and the patient made a good recovery. Three months after the removal of the growth the patient complained of pain in the lumbar region of left side, extending into the left thigh; this pain was intermittent. She passed out of my observation in June, when she went away for the summer, but returned to my care in October. She stated that she had suffered quite severely at times during the summer from pain in the lower lumbar region and thighs. At this time she was not able to walk well without the aid of crutches. Walking became more difficult, and she finally was compelled to abandon it entirely, although she was able to sit in a chair. After sitting for a time she complained of pain in lumbar region. Examination of the back showed no kyphosis, but there was tenderness on pressure over the lower lumbar vertebræ and sacrum and pain over the trochanters. The pain also extended to the thighs as far as the knee joint. There was no paralysis of the lower extremities and the knee jerks were normal. There was no loss of power in the bladder or rectum. The pain was intermittent and was described as acute at times and sometimes dull in character. The temperature was slightly elevated for a few weeks before the patient's death. There was no evidence of any recurrence of the growth at the seat of operation.

After repeated examinations and a careful study of the case it was thought probable that her symptoms were due to a secondary carcinomatous growth in lumbar vertebræ or sacrum. Dr. H. A. Hare, who saw the patient with me upon two occasions,

was inclined to this diagnosis. During the last month of her life the patient was kept comfortable by the use of a moderate amount of morphia. Death occurred suddenly from angina pectoris on January 7, 1907.

Autopsy.—The lower lumbar vertebra was found much softened, and cord and dura were thickened. Report of the microscopical examination of the fifth lumbar vertebra, cord and dura, made by Dr. A. G. Ellis, was as follows:

"Sections from the fifth lumbar vertebra show at points marked erosion and disappearance of the osseous structure which remains only in the form of isolated, irregular fragments. In these areas is a new growth made up of spheroidal epithelial cells and an irregular fibrous stroma. The nuclei of the former react well to stains, the protoplasm is in many instances granular and fragmenting. In a few areas are fairly distinct alveoli bounded by fibrous tissue and containing masses of the described cells. Tissue of this type surrounds many of the fragments of bone and extends into the overlying soft parts.

"Sections from the spinal dura in the region of this vertebra (4) show at one circumscribed point a decided thickening. Here the membrane is twice the thickness of the remaining portion, the increase being entirely due to fibrous tissue, epithelial elements being lacking. This area corresponds to the thickening of the dura noted macroscopically at the extreme lower end of the removed portion.

"*Diagnosis.*—Fatty degeneration of heart; scirrhous carcinoma of lumbar vertebra; chronic productive pachymeningitis of overlying dura."

Dr. B. F. Curtis [1] reports a case of carcinoma of the vertebra following removal of the breast for carcinoma. In this case, seven months after removal of the breast, loss of power over the bladder and rectum was observed, the knee reflexes were lost, and there was paralysis of the parts below the line of the umbilicus. There was also kyphosis in the mid-dorsal region. Pain was not severe. Laminectomy was performed, and upon exposing the cord it was found congested; the sixth dorsal vertebra was softened and projected slightly into the spinal canal. The pressure symptoms were not relieved by the operation. The patient died sixteen days after operation.

Primary carcinoma of bone is extremely rare, whereas secondary metastatic carcinoma of this tissue is not uncommon. The occurrence of metastatic carcinoma of bone, following

[1] N. Y. Med. Record, 1898, vol. i, p. 347.

primary carcinoma of the breast, is well recognized. The infection may occur months or years after the removal of the primary tumor. The character of the secondary tumor always corresponds to that of the primary one. The infection of the bone may occur by direct extension of the growth to this tissue when it originates in tissues adjacent to the bone, as is not infrequently seen in involvement of the ribs in recurrent carcinoma of the breast.

The development of carcinoma in bone distant from the primary growth results from the localization of carcinomatous emboli, and is said to occur at that portion of the bone subjected to the greatest traction or pressure. Carcinomatous infiltration of bone causes diffuse lacunar absorption, rendering the bone soft and easily bent or broken. There may also be present at the seat of infiltration a tendency to the development of new bone tissue; this condition has been described as osteopathic carcinosis.

According to von Recklinghausen, the bones most frequently the seat of secondary metastatic carcinoma are the vertebræ, femur, ribs, humerus and cranial bones. The vertebræ are said to be not infrequently the seat of carcinomatous infection from carcinoma of the breast, but my personal observation of a large number of cases has shown only one case in which the vertebræ were involved. On the other hand, Dowd [2] reports 29 cases operated upon for carcinoma of the breast, in 5 of whom symptoms of spinal metastasis developed. It should, however, be noted that no autopsies were recorded in any of these cases.

My experience with secondary carcinoma of the bone, following carcinoma of the breast, located at points not adjacent to the primary growth, has been confined to the following cases:

Case I.—Carcinoma of the lumbar vertebræ in the case previously reported.

Case II.—Carcinoma of the left clavicle in a woman of

[2] Annals of Surgery, 1898, vol. i.

fifty years, which developed five months after the removal of the left breast. In this case the patient complained of pain in left clavicle, which was fractured while turning in bed. In this case a marked tumor developed at the seat of fracture before her death, which occurred two months subsequently.

CASE III.—A woman, aged forty-five, removal of breast for carcinoma, in whom six months subsequently there were no signs of local recurrence, but the patient complained of pain in both femora. One morning while sitting in a chair both femora were fractured, apparently by muscular action. This patient before her death, which occurred two months later, developed a tumor of the right humerus and one of the left parietal bone.

CASE IV.—Woman of fifty years, who had had right breast removed for carcinoma, who, eight months after the removal of the breast, fractured her right femur while turning in bed, and developed a large spindle-shaped tumor at the seat of fracture. Death occurred several months after the appearance of the tumor of the femur.

CASE V.—Woman, aged fifty-five years, who while walking in her room felt the left leg give away under her, and she fell to the floor. When I saw her a few hours later I found a marked tumor at the middle of the left femur, mobility and crepitus were marked. Upon questioning her, she said she had for some months suffered from pain in the left femur and a painful tumor of the left breast which had never been operated upon. Upon examination of the breast I found a firm tumor involving the left breast, adherent to the skin, which presented the typical pig-skin induration. This patient died several months later of pulmonary metastasis.

The most prominent symptoms of metastatic carcinoma are localized pain, which may be dull or acute in character, and thickening of the bone at the seat of infection. The former is most common, and should direct attention to the occurrence of this affection. In this affection of bone, operative procedures offer little chance of relief, although in cases involving the spine, where pain and pressure symptoms are marked, as in the case reported by Curtis, it would seem justifiable to resort to operation, if only for temporary relief of

the symptoms. In cases involving the long bones, the possibility of fracture, which adds greatly to the patient's discomfort, should not be overlooked, and the patient should as far as possible be carefully guarded against the occurrence of this accident.

DR. MORRIS BOOTH MILLER described a fracture following operation for carcinoma of the breast in a woman of 40, the thorough operation having been performed. The patient when coming from the seashore, where she was during convalescence, was holding on to the seat to steady herself while standing in a street car. A slight jolt was followed by sharp pain in the arm and examination revealed an oblique fracture of the humerus. This suggested a recurrence, though there was no thickening of the bone and only the signs of an ordinary fracture. Demonstrable metastases occurred and the woman died the following winter.

DR. JOHN B. DEAVER said that Osler in 1902 reported 16 cases of carcinoma of the spine following carcinoma of the uterus or breast.

DR. WILLIAM L. RODMAN said that bone metastases in breast tumors are not particularly common, yet they are not extremely rare. Personally he has seen three cases. Two were unquestionably scirrhous carcinoma, the third was a sarcoma. In one of the carcinomas the metastastic growth was in the spine, the other in the left humerus, the same side as the primary tumor. The metastasis of the sarcoma was in the right femur six months after operation. The patient was the daughter of a prominent surgeon and had carried a benign growth for years.

Metastasis in sarcoma is more easily understood as the cells are in contact with the wall of the vessels, while in carcinoma the vessels are in the stroma. He has seen many cases of bone involvement in the sternum, but there the reason is very plain. Of indirect infection he has seen only the two cases, it not being difficult to see how metastasis to the spine occurs. The retromammary lymphatics drain through the second and fourth interspaces and then run along the course of the intercostal arteries to the thoracic duct. In this way spinal metastases occur. Dr. Wharton said that primary cancer of the bone is rare; he questions if it ever occurs, as epithelial cells are not found in bone. Such tumors are really endotheliomata or sarcomata. Bone metastases are important as they are never located before opera-

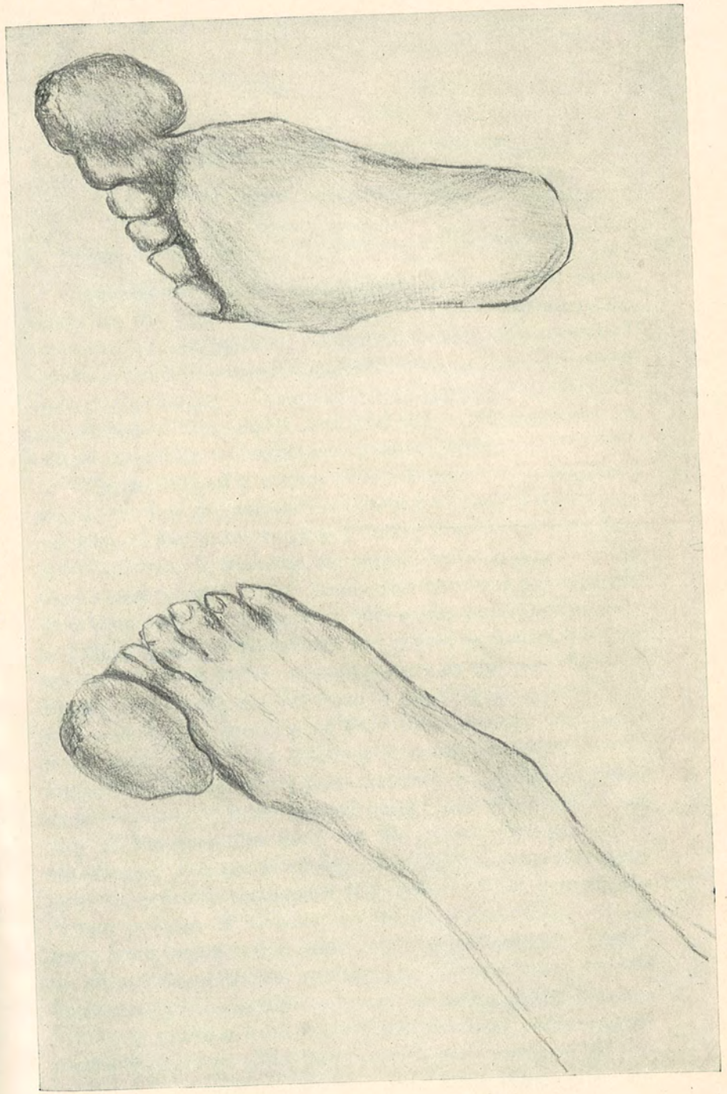
tion. The same chains of lymphatics as previously mentioned also explain metastases to the liver; this being the most common site of the secondary growths.

Dr. John B. Roberts saw eight years ago a case similar to that reported by Dr. Wharton. He was not able to determine if a growth was present, but regarded it as probably a case of spinal metastasis.

FIBROMA OF THE GREAT TOE.

Dr. Henry R. Wharton reported the case of a man, aged 50 years, who noticed 12 years before he came under the care of Dr. Wharton a tumor of the right great toe; it was painless, but increased gradually in size. He found it necessary to have the shoe for the right foot made upon a special last to accommodate the increasing bulk of the tumor. A casual inspection of the feet with the shoes on showed no marked difference in their size. Within a few weeks a portion of the tumor had ulcerated and gave him pain, which caused him to apply for relief.

The tumor was a fibroma and was attached to the periosteum. It was removed without difficulty, the wound being covered by skin flaps dissected from the tumor. See Fig. 1.



Fibroma of great toe.

POST-OPERATIVE TREATMENT.

BY JOHN H. GIBBON, M.D.,

OF PHILADELPHIA,

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PROBABLY no part of surgical work offers a better opportunity for the display of individuality than the post-operative treatment of our patients. Many of us attribute our good results as much to our particular after-care as to our individual operative technique. There can be no question regarding the importance of this subject, and after many operations and in certain conditions its importance becomes prime.

The welfare of a patient after an operation depends not only on the skill and accuracy with which the operation is done, but also on the means employed during the operation to conserve his strength, maintain the normal resisting power of his tissues, and render his early hours after operation peaceful and free from pain. The operator who works regardless of time and the amount of anæsthetic his patient is taking, or who pays no attention to the patient's posture on the table, the protection of the body not involved in the field of operation, or who uses large quantities of fluid regardless of whether it drains away properly or accumulates under his patient, is laying up for himself many post-operative complications which he who employs "speed without haste" and is thoughtful not only of the operation itself but his patient's condition, will seldom see. I do not advocate a want of thoroughness in operating in order to accomplish the closure of the wound in a certain number of minutes, or the constant shifting of the mind from the operation itself to the patient's condition, but I do mean that we should not drag an operation along over an unnecessarily long period, and that we should establish in our operating rooms a habit among our assistants and nurses of carefully looking after the comfort and condition of the patient. The post-operative treatment really begins when the

patient is still on the table. This is prophylaxis, the best of all treatments. We sometimes see patients anæsthetized long before the operator and his assistants are ready to begin their work. Again, we see patients put on the table with an unnecessary exposure of the body, with scant covering for the portion that is covered, and the whole or a large portion of the trunk, if it is an operation on the upper abdomen, deluged with water which quickly loses its temperature and chills the patient. Not infrequently we see patients placed on the operating table with nothing between the body and the glass or metal table but a thin, wet sheet, and more frequently still with the arm hanging over the edge of the table in such a way that the musculospiral nerve is pressed upon sufficiently to produce a palsy. These are only some of the thoughtless things of which we are occasionally guilty, and which go later to spell disappointment and sometimes disaster. Who has not seen a troublesome wrist drop which long outlasts the convalescence from a simple operation, or a pneumonia from exposure and cold on the operating table or during transit to the ward or room, without appreciating the importance of the thought of the post-operative period before and during the operation? We should never become so wrapped up in our operation and in demonstrating its steps to onlookers as to forget our patient's condition.

The choice of an anæsthetic to suit the individual case is a matter of great importance from a post-operative point of view, as many of our complications in this period have their origin in the anæsthetic, such as pneumonia, suppression of urine, vomiting, etc. It is a great mistake to confine ourselves exclusively to one anæsthetic. Many a feeble patient who could not stand ether or chloroform anæsthesia can be operated upon with impunity under infiltration anæsthesia or with the morphia-chloride of ethyl and ether, or the morphia-scopolamin-chloride of ethyl and ether sequence. I have been able with the latter sequence to remove a large ovarian cyst from a very old lady to whom I should have hesitated to give the required amount of ether alone. In this case one hypodermic

of morphia, $^1/_6$ gr., and scopolamin, $^1/_{100}$ gr., was given 2 minutes before operation. She was rendered unconscious with chloride of ethyl in about a minute, but one-half ounce of ether was employed during the entire operation, and the patient slept for an hour or more after it. In another case I was able by intraneural injection of cocain to amputate the leg without shock in a tuberculous patient to whom I feared to give ether lest his lung condition should be rendered active. In many cases of empyema chloride of ethyl will suffice for a rapidly performed thoracotomy. The same applies to the drainage of other collections of pus, and to amputations where time is an element and ether is contraindicated. It is well to familiarize ourselves with the different anæsthetics in order that we may be able to choose the best for the individual case.

Another factor in operative technique which has a marked post-operative influence is the way we handle the tissues and close the wound. A potent element in producing pain and predisposing to suppuration is the ligation of large masses of tissue and the tight suturing of wounds. There is no doubt that a comparatively clean wound, such as a lacerated wound of the scalp, which would otherwise heal by first intention, can be made to suppurate simply by tight sutures. All that Nature requires is a gentle approximation of wound edges, and more than this is detrimental. The present custom of closing wounds in layers has done much to reduce suppuration and to increase the patient's comfort.

Among the chief complaints after operation are pain, nausea, and thirst. The pain of course varies greatly according to the site of operation, and the individual disposition. Probably abdominal operations produce more pain than others, but this may be only because of the aggravation of the discomfort caused by the movement of the diaphragm, especially such excessive actions of this muscle as take place in retching and coughing. One of the surprising things about post-operative pain is that it is not more marked in certain plastic operations, such as hernia, repair of the perineum, etc. In all of these, however, it can be made very severe by too tight con-

striction of wound edges. Too much attention cannot be given by the surgeon to the prevention of pain at the critical period when quiet and sleep do so much to aid a prompt convalescence. There was a time not long since when it was the rule of most surgeons to withhold pain-relieving drugs, such as morphia, after abdominal operations. To give a hypodermic of morphia in these cases was thought to be a great mistake, but now we have learned that when properly employed in the post-operative treatment it is a great boon both to the patient and to the surgeon. All the bad effects formerly attributed to this drug, such as the production of flatus, bad effect on the kidneys, etc., we seem now to have forgotten, or at least we have learned that it was our own faulty technique which produced much of the trouble attributed to the morphia. It was usually infection and not morphia that caused the trouble. I am glad to say that I have never done an abdominal operation without administering a hypodermic of morphia and atropia before the patient has recovered consciousness, and I have never observed in any single case a bad effect, and my results generally have not been so bad as to make me change this plan of preventing, to some extent at least, the post-operative discomfort of the patient. When I was a hospital interne and assistant it was the custom of most of the operators after a laparotomy to order morphia, probably a small dose, to be given only if absolutely necessary. My experience was that it usually became necessary, and then, the patient having learned the relief to be obtained by its use, begged for a repetition of the dose. My present custom is to give a single hypodermic of morphia, ¼ gr., and atropia, $^1/_{150}$ gr., before anæsthesia is started or certainly before the patient regains consciousness. The result is that the patient passes from the sleep of the anæsthetic to the morphia sleep, gets comfortably over the most distressing hours after operation, those first few when ether is being eliminated by the lungs in large quantities and nausea and vomiting are common, and never knows that morphia has been given. The idea that morphia causes vomiting after an operation is absurd. Formerly I only used this

plan in abdominal cases, but the vomiting was so much less than in the other cases where it was not employed, and the patient's comfort so much greater and his return to consciousness so much quicker, that I now give the hypodermic after any operation of magnitude or long duration, or where I expect much after-pain. It is seldom that I am obliged to give a second dose, and this I try particularly to avoid, for I think it is better not to let the patient learn the comfort of morphia. It is largely for this reason that the drug is given before the close of the operation, and this time is also chosen because I want the drug to act before the patient begins to regain consciousness and vomit. A large majority of patients after this treatment never vomit at all. All one has to do to become convinced of the advantages of this method of treating post-operative pain is to employ it in a few cases and compare the results with those obtained when no morphia is used, or when it is given late and in small quantities. The repeated small dose of morphia does not appeal to me, because it would seem that the patient would become dependent upon it. Where the single full dose is given before the close of anæsthesia the patient if not disturbed will often sleep for from one to three hours, and remain quiet for a much longer period.

Pain developing some hours after an operation is not to be treated by the administration of an anodyne, but its cause should be carefully sought and removed. A careful and considerate nurse can do much to relieve such pain. Oftentimes the simple change of posture, the cutting of a tight bandage, the relief of pressure on some bony prominence, straightening out the clothing, and such little attentions will give relief. I have seen a patient kept awake all night by pressure on the heel after fracture of the leg, and by pressure on the internal condyle by an internal angular splint. Pain under such circumstances is absolutely unnecessary, and its possible cause should always be considered. I have known a safety pin to be passed through the patient's skin in fixing a bandage and to remain in this position for days. Therefore, instead of putting down the patient's complaint of pain to nervousness or to want

of pluck, we should always make sure that there is not some actual cause for the complaint.

Nausea and vomiting are not nearly so troublesome after operations as they once were. This has largely been due to the improved methods of administering our anæsthetics, and it can be largely obviated by making the quantity of anæsthetic employed as small as possible. The amount of ether and chloroform administered has much to do with the continued vomiting after operation, and it can easily be reduced by the judicious use of morphia and atropia administered either before or during the anæsthesia, or by administering chloride of ethyl or nitrous oxide before the ether or chloroform. It is my invariable custom to employ chloride of ethyl first, and in this way the amount of ether is reduced nearly one-half. The less ether there is for the patient to eliminate, the less nausea and discomfort he will have and the less likelihood of interference with the eliminating function of the kidneys. As I have indicated before, the use of morphia at the close of the operation before the patient regains consciousness will entirely obviate or greatly reduce vomiting. Inhalations of vinegar have long been employed to reduce nausea, and do seem to be productive of some good. So simple a means as elevation of the head will often reduce the sensation of nausea, and a draught of water will sometimes not only not increase the nausea, but will reduce it. Where it is possible for the patient to be placed in the sitting position nausea will frequently be relieved. This is particularly true after operations on the stomach itself. A drainage tube placed in the abdominal cavity may produce continued reflex vomiting, which will cease on removal of the tube. In my own experience troublesome vomiting is rare where a full dose of morphia is given at the close of the operation.

Thirst, too, is a symptom which is much less troublesome now than formerly where water was withheld for long periods after operation. The thirst can be largely relieved by giving large quantities of salt solution by the rectum. There are few operations, however, after which water cannot be given promptly by the mouth. If a patient is not nauseated I allow

him water within a few hours in quantities of an ounce. It has not been my experience that this is apt to start up vomiting. This early administration of water applies after abdominal operations as after others. I think the giving of a considerable quantity of water at regular intervals is preferable to the continual sucking of ice. Liquid food should be given as soon as the patient has a desire for it, or as soon as the nausea has passed away.

Confinement in one position, with the restriction of all movement after an operation, is extremely trying on a patient, and often results in insomnia and nervousness. Any movement that does not directly interfere with the healing process of the wound should be allowed. It does not hurt a properly closed abdominal wound if the patient is early placed upon his side, or if the shoulders are elevated, or the legs drawn up. When a patient is very anxious to change his position and you are sure this change will not be comfortable, it is not a bad plan to allow him to try the new position, when he will be convinced of his own error and more contented in the position he had first occupied. Too much care cannot be given to obtaining a comfortable attitude in bed after an operation. Restraint in an unnatural position gives rise to the greatest restlessness and discomfort. This is well illustrated in the tight confinement of the arm to the chest after breast operations. The patient is much more comfortable, the wound heals better, and there is less restriction of subsequent motion of the shoulder, if the arm is dressed at a right angle to the body.

One of the problems after abdominal operations is the best time at which to open the patient's bowels. Formerly it was the custom of most surgeons to give some laxative, usually calomel, on the day following the operation. This was due to the fact that an early movement of the bowels usually meant that no infection of the peritoneum had occurred, or that such an infection was not extending. The mere movement of the bowels, however, is in no way curative under such circumstances, and it is far better to allow the intestine to rest quietly

after an operation than it is to stir up painful peristalsis by means of laxatives. This, of course, applies to the cases in which a proper preparation for the operation has been made. A movement by a glycerin suppository, or an oil or soapsuds enema is much more comfortable to the patient and less disturbing to the healing viscera than a purgative. If nothing but liquid food is given for two or three days after operation the third day is early enough to open the bowels.

Inability to empty the bladder is of common occurrence in the post-operative period, and resort to the catheter is often necessary. To resort to catheterization when the bladder is not painfully distended is a mistake, and it is far better to have the patient empty the bladder himself than to pass the catheter. Some surgeons even go so far as to allow the patient to get out of bed for this purpose, and where it is possible I believe it to be good treatment. I avoid the use of the catheter as much as possible. When the catheter is employed the greatest care should be exercised and the catheterization done by experienced orderly or nurse. Even under the best circumstances infections of the urethra and bladder occur, and it is the surgeon's duty to see that all necessary aseptic precautions are taken to avoid these unfortunate complications. No nurse or orderly should ever be allowed to use a metal instrument. Catheterization in children is to be particularly avoided, as injury of the male urethra in childhood is easily accomplished. In children I would much prefer to have the patient get out of bed to having a catheter used.

The time at which a patient is allowed to get out of bed varies with the operation which has been performed. A few rules, however, can easily be laid down. In the first place, old people should be gotten out of bed as soon after operation as possible. The advantage of this is easily shown in the present-day results from prostatectomy, where the patient is gotten out of bed on the second or third day. In abdominal operations on old people a change of posture and early transference from bed to couch or chair is very important. There has been a marked tendency during recent years to shorten the period

which a patient spends in bed after an abdominal operation. After simple appendectomies many surgeons allow their patients to get out of bed on the following day. I have not been able to bring myself quite to this point, but I am constantly shortening the period. In clean cases where the abdominal wound is accurately closed and no muscle cut across its fibres, I get the patient out of bed on about the eight or ninth day with the abdomen well supported by a binder, and allow moving about on the tenth or eleventh day. In this particular I think the individual disposition of the patient must be taken carefully into account. There are many patients who are benefited by a longer rest in bed, whereas to others, such as old people, and those who are inclined to magnify their ailments, a prolonged rest may be harmful.

In closing I would say that I think we are often guilty of paying too little attention to our patients during the post-operative period, and during the convalescence which follows. Many good results are spoiled by this neglect. For instance, take the tuberculous lesions for which the surgeon is frequently operating. If the after-care of these patients is not properly carried out, especially the hygienic treatment, an early recurrence is the rule. And again, after operations for syphilitic lesions we too frequently fail to instruct the patient in the necessity of continuing his specific treatment. A proper restoration of function is frequently not realized because of our neglect of such agents as massage and passive movements. Recurrences after operations for knock-knees and bow-legs often take place because no brace to prevent the recurrence is employed. These are only a few instances which show the importance of treatment after operations.

Dr. John B. Deaver endorsed much that was said by Dr. Gibbon. He believes, however, that instead of patients being neglected they receive too much attention. His motto for the house physician is, "Let the patient get well." No medicine should be given after an operation as a rule. He is opposed to the indiscriminate and routine use of strychnin. He employs nothing but ether as an anæsthetic, being afraid of chloride of ethyl, as he has

heard of deaths from it. Giving the anæsthetic is an important thing and ether usually does no harm. It is best to anæsthetize the patient on the operating table, as it is a mistake to move him there after ether is begun, this always meaning an extra amount of the drug. The patient may be anæsthetized in the high pelvic position even, the intestines thus being floated up and requiring less packing when the operation, being an abdominal one, is begun. When operating upon the upper abdomen he always has the patient wrapped in cotton and put upon a hot water bed; the cotton is at once removed when the patient is taken to his room.

As to scopolamin, Dr. Deaver does not know what it looks like and is thankful he does not. Tight sutures, as stated by Dr. Gibbon, make trouble; he usually places a drain in stout walls for a day. He was sorry to hear Dr. Gibbon say he uses morphin after operations; Dr. Deaver would at once discharge a resident if he did that. Its immediate effect is to make the patient more comfortable; after that it makes him more uncomfortable. It creates more thirst and often more nausea. Occasionally he employs morphia, but never as a routine measure. He administers oxygen immediately after operation and this lessens nausea, that fact being noted in the German Hospital by the Sisters who have been on duty for fifteen to twenty years. A careful nurse is of more moment than a hypodermic of morphia. There is not so much in the use of morphia after gastro-enterostomy as formerly supposed. When this operation is performed by making the communication with the jejunum as near as possible to its commencement vomiting does not occur.

Dr. Deaver never sees shock, except in cases of hæmorrhage or prolonged operation or bad anæsthetization. The pulse of his patients after short operations is always about 84 to 90. Getting the patient out of bed early is an important point. Cases of hysterectomy are gotten out in a week and are encouraged to turn on their side early. Many of the cases of phlebitis, formerly so frequently seen, were due to lack of these measures. As regards passing the catheter, he allows hernia patients to get up to pass urine; worse results than are made possible by this come from catheter cystitis. He never operates upon an empyema without first aspirating it.

Dr. William L. Rodman now has largely the opinion of Dr. Gibbon regarding morphia, though formerly he was afraid of it.

Since its use he sees much less post-operative vomiting. Perhaps it is unwise, however, to use it as a routine measure. He has never known a gastro-enterostomy to give trouble when morphia is given. There is less shock and less anæsthetic is necessary. A quarter grain of morphia and one one-hundred and fiftieth grain of atropia are invariably given in cases of gastro-enterostomy. Of seven recent cases only one patient vomited, and that one only once. We give anæsthetics much better now than formerly and do not see so much distress from their use. When ether is given by the drop method there is but little post-operative vomiting, with or without morphia. Dr. Rodman prefers chloroform in empyema cases, of which he has operated upon 100 to 150 without losing a patient, and has never seen any ill results; with ether these cases are more unpleasant. Patients should be gotten out of bed early, especially the subjects of cancer, who should be out in 48 hours. If such persons, particularly when the cancer was in the abdomen, are kept in bed a few days they never get out. The possible development of a ventral hernia is not to be regarded in these cases. In gastro-enterostomy for cancer of the stomach, the patient should be out of bed the day following the operation.

Dr. William J. Taylor finds that patients occasionally are benefited by washing out the stomach before they are out of the anæsthesia. This is especially true in cases of intestinal obstruction or in emergency operations where previous emptying of the bowels has not been possible. Food should not be given too soon. He had rather keep a patient three days without food than to give milk and soup and have it ferment in the intestine instead of digesting.

Dr. Richard H. Harte does not believe in the indiscriminate use of morphia in operative cases. He believes that the routine dose of a quarter grain of morphia before a patient is etherized is in time liable to lead to serious results, numerous cases being reported where this dose has been fatal. As a rule, the less medicine given after operation the better for the patient. Invariably the bowels, if left to themselves, will move in the course of two or three days. Their action can, however, be supplemented by the use of a simple enema. Dr. Harte lays great stress on the importance of keeping patients warm and dry during operation, avoiding exposure as much as possible, as shock is often induced by air coming in contact with wet clothing, as well as by prolonged

unnecessary manipulation of the intestine. Fortunately this latter is less noticeable now, as the non-operative field is pretty well shut out by the judicious use of pads of gauze.

The early feeding of patients is unquestionably a great error, as food introduced into the bowel too soon only ferments and causes an immense amount of discomfort. Patients are as a rule much better by waiting 24 to 48 hours before any food is ingested, and even then, if there is any question of irritability of the stomach, they can be readily nourished by the bowel. Thirst, which is so common in post-operative cases, can be relieved by keeping the bowel filled with normal salt solution.

Dr. John B. Roberts said that post-operative backache is not due to operation itself or to the fact that the patient is kept in bed, but is usually caused by the flat operating table upon which the patient lies during anæsthesia and operation. A hard pad should be placed on the table under the lumbar region of the patient. A hard mattress is also too flat. The table ought to be made to fit the curves of the back, so that the muscles and ligaments may not be strained during a long operation. For 18 or 20 years he has given before almost all operations a quarter of a grain of morphia and one one-hundred and fiftieth of atropin hypodermically. Less anæsthetic is required, there is less interference with breathing by mucus, and the heart is strengthened by this preliminary to anæsthesia. He has never known it to hurt a patient. The curse of thirst, due to the operator insisting that abdominal cases should have no water to drink till hours have elapsed, should be avoided by all sensible surgeons. The unnecessary torture thus induced should meet with the strong condemnation of the profession. Dr. Roberts has always contended, since the rise of abdominal surgery, that its principles are identical with those of general surgery; and has acted on that belief. A little morphia before anæsthesia and water afterwards do no harm in either case. Another point in post-operative treatment is that nurses nearly always put patients on the stretcher without a pillow under their heads; a low pillow surely can do no harm and is much more comfortable to the patient than to lie with the head thrown backward on the bed.

Dr. John B. Deaver said regarding backache being due to flat tables, he has noted that few gall-stone patients complain of their backs after operation. This would indicate that Dr. Roberts is correct in his statement about the lack of support to the back.

Dr. George G. Ross wondered how many of the surgeons present had suffered as have the patients they were discussing? He had had his appendix removed, and the following night suffered the tortures of the damned. One of his friends surreptitiously gave him a morphin suppository which afforded great relief. The nurse brought in a large bowl of ice, which he did not interfere with until the ice all melted, when he drank every drop of the water. And this was not followed by vomiting.

Dr. Gibbon, in closing, said that he agreed with the other speakers that as few drugs should be used after operation as possible. He emphasized the fact that in using morphia in the manner described it formed rather a part of the anæsthetic than of the after-treatment. Dr. Deaver's dissatisfaction with the use of morphia was the result of using it after, and not during or before, anæsthesia. It has not been Dr. Gibbon's experience that distention follows its use in the way described. His own personal experience after an operation for acute appendicitis had confirmed him in the value of the ethyl chloride-ether-morphia sequence. He slept comfortably for four hours after his operation, was not at all nauseated, and had no taste or smell of ether. He said that he should have mentioned in his paper the great value of washing out the stomach, especially in those patients who had not been properly prepared for operation.