the healing of the bone after fracture, the periosteum and the endosteum are the chief factors in the process of repair, and that the cortical bone has a relatively slight function, if any, in the formation of the new bone tissue. The best graft is one covered by periosteum and with endosteum on its inner surface. There is a wide variation in the results obtained by the free transplantation of the periosteum, which depends on a number of factors which influence bone formation in the periosteum, such as age, the presence of blood and fibrin, which can readily be demonstrated, and certain other as yet undetermined factors which seemingly cause a failure of bone production by the periosteum under apparently identical conditions. The endosteum is as important a factor in the regeneration of the transplanted bone as it is in the healing process in fracture.

(To be continued)

DELAWARE STATE MEDICAL SOCIETY

Annual Meeting, held October 13-14, 1913

The President, DR. L. A. H. BISHOP, Dover, in the Chair

Officers Elected

The following officers were elected for the ensuing year: president, Dr. William B. Orr, Lewes; vice-presidents, Drs. T. P. Davies, Farnhurst, and William Marshall, Milford; secretary, Dr. G. W. K. Forrest, Wilmington; treasurer, Dr. S. C. Rumford; delegate to the American Medical Association, Dr. H. W. Briggs, Wilmington.

Next meeting to be held Oct. 13-14, 1914, in Wilmington.

Disease of the Gall-Bladder and Bile-Ducts

DR. L. A. H. BISHOP, Dover: Suppurative cholangitis is due primarily to an obstruction of the common bile duct due to a stone, with resulting dilatation of the gall-bladder and bile-ducts. The infective agent is usually the *Bacillus coli communis*.

Surgical Treatment of Tuberculous and Other Infected Joints

DR. J. J. JONES, Wilmington: Tuberculous joints are encountered most commonly among children from 3 to 5 years of age. Forty per cent. of cases involve the hip and 10 per cent. the knee. The other joints most frequently affected are the ankle, shoulder, elbow and wrist. As a general rule the tuberculous condition is found in the short bones. It is often thought that when we find a tuberculous joint or bone we should remove the affected portion, but with a little care a great deal can be done to save these parts. My practice is to inject an iodine solution at various points around the infected joint, and, if it is necessary to cut away any tissue, to fill up the opening with powdered boric acid and tincture of iodine, about 30 minims of the tincture to the ounce of powdered boric acid. I open up every knee-joint in which fluid is found. Any general practitioner can do this. After the fluid has been removed the main thing is to prevent its return. The patient should be kept at rest and given general treatment. The joint is kept in a wet bichlorid dressing and bandaged tightly for about four days in order to prevent the return of fluid. Two hypodermic injections of morphin are usually necessary on account of pain.

DISCUSSION

DR. GEORGE I. MCKELWAY, Dover: I think it is bad teaching that in every such case of fluid in the knee-joint the joint should be opened. We all see cases which recover promptly with no subsequent trouble, simply by absolute rest in the plaster-of-Paris bandage for one to two weeks. I think it is a very great mistake to say that any general practitioner can safely open the knee-joint. The men who do most of this sort of surgery caution that the most absolute and scrupulous asepsis is necessary in operating on the joints or bones. Everything should be done with instruments and parts not even touched with the gloved finger because of the exceeding liability to infection.

DR. D. W. LEWIS, Middletown: I take exception to Dr. Jones' advice to open all joints in which there is fluid. I consider it bad practice always to do that and also for those to do it who are not accustomed to it.

DR. J. W. STEELE, Dover: I do not agree with Dr. Jones' practice of opening up the joint. In a recent case with effusion into the knee-joint I gave the patient half a dozen cantharides blisters about the size of a nickel and told him to place one of these blisters on the knee every third night, treating it until the entire knee was circled. By the time this was done under absolute rest the fluid had almost completely absorbed.

DR. A. ROBIN, Wilmington: Three years ago I saw Dr. Jones of Liverpool operate on the knee-joint. He takes extreme precautions in preparing for the operation and never cuts without extraordinary care. In tuberculous troubles it has been found that tuberculin in larger doses than usually employed brings wonderful results. In bone diseases no diagnosis should be made unless a careful roentgenographic study has been made.

DR. J. J. JONES, Wilmington: In answer to criticisms about opening the knee-joint, I was speaking of tuberculous and infected joints. When you have an infected joint with a large quantity of fluid in it, it should be removed, for it will destroy the synovial membrane and cartilage and eventually may destroy the bone. No one would dare open the knee-joint without having everything thoroughly sterile.

Serum Therapy

DR. WILLIAM H. KRAEMER, Wilmington: In one case, in a man 46 years of age, in which cystoscopic together with microscopic examination showed tuberculous cystitis, I used tuberculin. The tuberculin injections were kept up for eight months, at the end of which time the symptom of pain in the bladder and frequency of urination had been greatly relieved.

DISCUSSION

DR. WILLIAM H. KRAEMER, Wilmington: The reason I have been so determined to have the normal temperature before giving tuberculin is that, as I understand it, the idea of giving tuberculin is to establish a reaction of the body against the infection, and, if the patient is throwing out of his own accord sufficient toxic substances to produce a high temperature in the body, I feel that giving him tuberculin would only add to the reaction and that it would not bring about any favorable results.

DR. G. I. MCKELWAY, Dover: Tuberculin does good in tuberculous gland infections. The reason is that they are simply tuberculous infections; they are not mixed infections. Tuberculin does no good in advanced cases of tuberculosis because the infection is a mixed infection. You have not only a tuberculous condition to deal with, but what it is fair to call abscess in the lung from pyogenic organisms on which tuberculin has no effect and on which nothing will have any practical effect. The secret of using tuberculin is to use too little rather than too much. The usual mistake is that men are impatient for results and think that if a little does good a little more will do better.

The Roentgen Ray as an Aid to the General Practitioner

DR. HENRY A. CLEAVER, Wilmington: The Roentgen ray is in no sense a panacea for disease either as to diagnosis or as to treatment. It is one of the most powerful aids, but requires specialized technic and training. It will never displace the clinical methods of examination. The diagnostic features are in the foreground and the element of treatment is much in the experimental stage. The future of the Roentgen ray lies largely in respect to treatment. For the patient there is always danger unless the man who is manipulating the machine knows it and knows it thoroughly. The man who has experience is the best judge when to stop. There is entirely too much promiscuous roentgenoscopy, especially with the apparatus which are designed to give impressions or results. The machines oscillate to two extremes which either will not do the work or else will burn the patient.

(To be continued)