

the time that the defendant was found to be negligent. In other words, if, as the court instructed, the defendant was not negligent in his original treatment, he could not be held for any suffering endured by the plaintiff during the time this treatment continued, and, if held responsible for something occurring after this treatment ceased, he should be held liable only for such pain and suffering, if any, as resulted from his negligence at that time, and not for what might have been endured from the beginning. And, in any event, the plaintiff could not recover, unless she proved the negligence charged in her petition, and her damages must be limited to such as proximately arose from the negligence charged.

Presumptions do not ordinarily relate backward. A condition, once shown, may be presumed to continue; but ordinarily from a condition once found no presumption is indulged that it has existed for any given time in the past. True, such presumptions sometimes arise in virtue of the nature of the condition; but this arises from proof of other things in addition to present conditions, as its condition of permanency of progressiveness.

Liability of Agent of Corporation for Unlawfully Practicing Medicine

(*Norwood vs. State (Texas)*, 158 S. W. R. 270)

The Court of Criminal Appeals of Texas says that the main contention in the court below of the appellant (defendant), who was convicted for unlawfully practicing medicine, was, in effect, that, while numerous patients were treated in the hospital of which he had charge, it belonged to a corporation, and he was the mere manager, employee and agent of the corporation in whatever was done in the way of treating patients, receiving pay therefor, etc. The court at his instance gave this special charge to the jury: "You are instructed that if you believe from the evidence that the treatment given to Vinnie Spangler was given by the Norwood Institute, a corporation, and not by the defendant, then, in that event, your verdict should be for the defendant, and you should say by your verdict not guilty." This special charge was not the law and should not have been given. Even if he was an officer, agent, servant or employee of said corporation and committed the offense charged, even though purporting to act or acting for the corporation, he would be guilty. Mr. Bishop in his Criminal Law, in Section 892, says, "An agent or servant who, knowing the facts, does a criminal thing for his principal or master, is answerable to the criminal law precisely as though he had proceeded self-moved, and for his own personal benefit. And it is the same when with the like knowledge he merely assists therein." Again, in Section 885, he says, "The authorities agree that there are in misdemeanor no accessories either in name or in the order of the prosecution." Mr. Branch in his Texas Criminal Law, Section 681, lays down this rule: "There is no distinction between principals and accomplices in misdemeanors; a party who would be an accomplice if the offense was a felony is a principal if the offense is a misdemeanor. If defendant comes either within the definition of an accomplice or a principal, he is a principal in a misdemeanor." Then there was a fatal variance between the allegations and the proof in this case in that the allegations charged that the defendant did unlawfully treat a disease or disorder, to wit, did treat Vinnie Spangler for consumption, diagnosing her case and prescribing some gas treatment therefor, while the proof did not establish or tend to establish that Vinnie Spangler had consumption or was treated for consumption.

Small-Pox.—Eleven of the thirteen patients now in the small-pox hospital of Chicago, qualifying for waffle-iron faces, came from a "health institute" which denounces vaccination as wicked, superstitious, useless, nasty, impertinent and an "invasion of personal rights." This condition is typical. Small-pox has been well named the "poisoned arrow of the fool-killer." Those who want to escape these arrows had better provide themselves with the only shield that experience has proved effective—vaccination.—*Chicago Journal*.

Society Proceedings

COMING MEETINGS

American Physiological Society, Philadelphia, Dec. 27-29.
Society of American Bacteriologists, New York, Dec. 31-Jan. 2.
Southern Surgical and Gynecological Assn., Atlanta, Dec. 16-18.
Western Surgical Association, St. Louis, Dec. 19-20.

CHICAGO PEDIATRIC SOCIETY

Regular Meeting, held Nov. 21, 1913

The President, DR. FRANK X. WALLS, in the Chair

Report of Two Cases of Pachymeningitis Hemorrhagica

DR. GRACE MEIGS: This condition has been well recognized in the adult for a long time, but only recently as not uncommon in children, especially in infants. The onset is characterized by convulsions, vomiting and signs of acute meningitis. In 1881 it was first suggested that the condition could be diagnosed during life. Finkelstein, in 1904, suggested that a puncture of the fontanel could be made in these cases, and a bloody fluid, characteristic of the disease, could be obtained. He also was the first to mention the presence of retinal hemorrhages.

The cause of pachymeningitis hemorrhagica has been variously explained. The older writers, in describing the condition in adults, ascribed it chiefly to tuberculosis and syphilis, but Huebner thinks that congenital syphilis is by far the most frequent cause; also chronic gastro-intestinal diseases. Finkelstein, however, thinks that rickets is the most important predisposing cause. Hahn suggests that it is a manifestation of the hemorrhagic diathesis. Virchow thinks that the primary lesion is an inflammation of the dura mater. All are agreed that it is apparently due to toxins.

The post-mortem findings are characteristic. The inner surface of the dura is covered with a membrane, most abundant on the convexity, but usually present all over the dura. It is rather closely adherent, but can usually be peeled off from the dura, leaving it quite smooth and only somewhat thickened, with a few eechyoses. The membrane varies in thickness from the most delicate cobweb-like membrane to a very thick connective-tissue layer. There are many layers, and between them the hemorrhage occurs, spreading them apart so as to form a bag, into which there is often an effusion of fluid, and then probably later hemorrhages; at least all stages are found with simply a yellow fluid or a fluid containing blood, or simply with blood-clots. The brain itself shows no changes, except evidence of pressure.

It is not known just what the effects of such a condition would be on the brain in after-life. It is possible that some of the paralyses of childhood may be due to this condition. The spinal fluid in all the cases reported contained some blood—very often only found microscopically; but sometimes the fluid was markedly hemorrhagic.

In some cases no clinical symptoms of any kind are shown during life, but the condition is found post mortem. In those which do show symptoms there are two classes: First, the symptoms are those of hydrocephalus with recurring attacks simulating an acute meningitis, with coma, convulsions, vomiting, strabismus, opisthotonos and all the other symptoms; secondly, the symptoms are merely those of hydrocephalus, together with perhaps increased reflexes or a little rigidity. In both classes there is evidence of a hydrocephalus—that is, the fontanel is large and bulging, the sutures are gaping, and there is often a hydrocephalic stare. This enlargement of the head is sometimes very sudden. The most characteristic findings are those of a choked disk and retinal hemorrhages, the latter being fairly diagnostic. Important for diagnosis, however, is the finding of fluid on puncture of the fontanel, and this procedure is quite without danger in all cases. The only thing to be avoided is puncture of the central sinus, which can easily be done by making the puncture at the lateral angle of the fontanel. A needle with a short point is used. In the positive cases, immediately on

going through the skin and somewhat resistant dura there is a gush of fluid, under mild pressure. This fluid is quite characteristic, being composed of a bright yellow or orange serous layer, and a layer of dark, chocolate-colored erythrocytes. These show evidence of having been long in the fluid. The erythrocytes settle at the bottom when the fluid stands, and there is no coagulation.

In treatment, probably the most commonly used measure is lumbar puncture, and this is proved to have good effect because several patients who have been observed through the course of the disease and have died from some other diseases afterward have shown the trouble in the stage of resolution and cure. Finkelstein does not think that puncturing the fontanel does any permanent good. He advises the use of gelatin, and injects 20 c.c. of a 10 per cent. solution. Huebner uses the antisyphilitic treatment with the idea that most of the cases are syphilitic, and he has seen good effects.

My first case while not a definitely proved case, was very suggestive of this condition. The baby was 3 months old, and was admitted with the diagnosis of hydrocephalus. There was no syphilitic or tuberculous history. The condition of the head had been present since birth, but had lately been getting worse. Examination showed a well-developed child; the head was enlarged and the sutures separated; the eyes were turned to the right and fixed. A few days later the right arm was inverted and flexed, and not moved; later the left arm showed the same condition. For the first few days the condition was quite good, but about three days after entrance an acute attack began, with convulsions, lasting one and a half minutes, with twitching of the right side of the face. Temperature was 101 F. Stools were good at this time. Lumbar puncture showed fluid under a high pressure; there were 7,000 leukocytes to the cubic centimeter. Noguchi was positive. There was no evidence of syphilis. Reaction was positive for a condition of inflammation. The cultures and smears were unsatisfactory. An organism was seen which the pathologist considered a contamination. It looked rather like an influenza bacillus. A tentative diagnosis of pachymeningitis was made, and puncture of the fontanel on the left side done because the symptoms were so well localized on the right side. The fluid was obtained under quite mild pressure, was opalescent and with quite a mixture of blood, but was not yellow. On standing, it coagulated and there was a marked deposit of blood. It was sterile. Spinal puncture made at the same time gave an opalescent fluid, with a slight precipitate of blood. It was seen only after having stood for twenty-four hours. The blood was evidently thoroughly mixed with the fluid. The leukocyte count was 100 per cent. No cell count was made, on account of the mixture with blood. After this the child's condition improved, but later it developed nasal diphtheria and died.

The second case was undoubtedly one that could not be diagnosed during life. There were no symptoms except enlargement of the head. The child was 4 months old, and was brought into the hospital, not on account of the condition of the head, but merely because of the failure to gain, vomiting and constipation. It had a history of gastro-intestinal disturbance. The child was small, emaciated and old-looking. The head was very large and the face small; the anterior fontanel was 4 fingers in diameter. The coronal suture was very wide; the other sutures were plainly palpable. The circumference of the head was 41.25 cm. The neck was not rigid. General examination was entirely negative, except for the emaciation and for the finding of an enlarged spleen and enlarged lymph-nodes. The urine was negative. The Wassermann reaction, both in blood and in spinal fluid, was negative. Lumbar puncture was performed and 20 c.c. of fluid obtained—quite clear and under considerable pressure. The remarkable thing in the course of this case was the decrease in the size of the head (from 41.25 cm. on entrance to 39 cm. at death), which began very soon after the lumbar puncture. While in the hospital there was gradual loss in weight, very bad stools, and finally, twenty-four days later, during very hot weather, the child died quite suddenly. The diagnosis was decomposition and internal hydrocephalus.

Post-mortem was made thirty-six hours after death, and an examination only of the head made, and the condition of pachymeningitis hemorrhagica shown. When the skull cap was taken off bloody fluid escaped, and we found that the inner surface of the dura was entirely covered with a membrane which was in some places quite delicate and thin, and in others thick. It could be peeled off the dura, but was rather firmly adherent in some places. The base of the brain was also covered with the same membrane. There were a great many different layers to be distinguished, and in one place, over the left anterior portion, underneath the puncture, there was about an ounce of bloody fluid. The brain itself was soft and the surface quite negative. There was a moderate degree of internal hydrocephalus present. Microscopically, the dura was thickened and this membrane showed all the different stages of granulation tissue and connective tissue. In some places numerous large blood-vessels were seen, and in other places ecchymoses.

The Feeding of Five Hundred Infant-Welfare Babies

Dr. R. A. KROST: The work done at the conference now is exceedingly gratifying, the former distrust shown by mothers has disappeared, and they now follow our instructions quite faithfully in most cases. The gospel of regularity of feedings, the use of certified milk and the longer interval of feeding has spread, as evidenced by the number of new cases. Individual milk prescriptions calling for certified milk are given. They are prepared by the nurse at the baby's home until the mother can prepare them correctly. The feedings are made as simple as possible, using usually an ounce and a half of certified milk to the pound weight of the child. The milk is diluted with barley-water in varying amounts, according to the child's age, and to the diluent about 5 per cent. cane-sugar is added, although almost never is more than $\frac{3}{4}$ ounce used. I think that 2 ounces is nearer the amount necessary to bring about a 4-ounce gain or more per week with the small amount of sugar used. Cane sugar is used because it is cheaper. In cases of diarrhea the babies were put on saccharin-sweetened barley-water for from twenty-four to thirty-six hours; then diluted boiled skimmed milk was used, then diluted whole milk, and, lastly, sugar was added. Early in the work I fed the babies on the four-hour interval plan, and later changed it to three because of the inability to feed the ordinary healthy baby enough food to satisfy its caloric needs by the four-hour feeding without using too concentrated a food or too much sugar. Between feedings a few ounces of boiled water were given, if the infant cried.

A mistake too often made in the cases of malnutrition and marasmus is a frequent change in food. A baby becomes adapted to its food; therefore, it is unwise to change it. The weight may remain stationary for a time, or there may even be a slight loss, but eventually there is a gain. In addition to the milk, once a day we gave the babies aged 6 months or over, and sometimes even younger babies, broths containing crumbled toast or farina. Probably the addition to the cow's milk diet brought about its better digestion and assimilation.

I have used boiled milk for six months and found no bad effects from its use. Constipation is perhaps a little more frequent and persistent than on raw milk, but not much. There is little vomiting, less than on boiled milk, and less colic. The gains are about the same from week to week, but greater on boiled milk if followed for months.

There were twenty-eight deaths from all causes in 5,475 cases, a percentage of 5.8. In eighteen cases diarrhea or nutritional disturbance was the cause. These diarrhea deaths occurred during July, August and September.

DISCUSSION

Dr. ALBERT H. BEIFELD: The most common causes of infant mortality are poverty, ignorance and neglect. Simple mixtures should always be used. One of the most important points is the training of the physician. He should learn that each component of breast-milk has a definite physiologic action in digestion and nutrition, and he should be able to manipulate each one of the components so that he will obtain

a result without having to rely on the complicated mixtures, such as *Biwicissmilch*, buttermilk, malt soups, etc. There are certain faults which we are tending to fall into in this matter. One is that we do not give enough fat in the food, and another that we are inclined to a rather slavish adherence to the malt-dextrose preparation. Just as the mother should be trained to develop a certain sense of independence in caring for the baby and understanding how to control its feedings, so the baby's intestine should be trained to endure the more actively fermenting sugars, such as cane-sugar or milk-sugar, and if we persist slavishly in the use of malt-dextrose preparations we are pampering the baby's intestine. These things should be used as therapeutic measures, as intended by the inventor. I endorse the early addition of foods in the feeding of these bottle-fed babies. It has a striking effect, when we give a little portion of soup each day to the baby which has been fed solely on milk. I have seen several babies recently that have been brought from hospitals where they have been fed according to rule and regulation and the highest dictum of our scientific calling, and they were in a miserable condition because they had had nothing to eat.

One other point: We can get along very nicely without the use of *Biwicissmilch* by the administration of simple protein, the dried casein preparations. I recall two cases, with astonishingly striking results, in which, after three, four and five weeks of these slow losses in weight, the addition of a certain casein preparation brought about a gain in weight in two or three days. I think that we are inclined to be afraid of the amount of sugar used. It is neither a foreign body nor a poison. I think that just as we should use a sugar which will train the baby's intestine, we should use as liberal a supply as the condition demands. The outlook is very good in the home modification of milk. At first the mothers are a little bit slow, but when they see the results they become enthusiastic.

DR. H. F. HELMHOLZ: Dr. Krost thinks that very few cases of diarrhea are due to overfeeding. I should like to call attention to the large series of cases published by a pediatrician in Breslau, in which babies, given as low as 50 and 60 calories per kilogram of weight, gained very rapidly. On questioning the mothers closely it was found that they were giving the babies additional food. Even though we have these mothers very much under our control, still a great deal of food is given, frequently in excess of that which has been ordered.

DR. FRANK X. WALLS: These results are particularly interesting, when we consider that only 3.8 per cent. of these babies die. It is in striking contrast to the figures in our text-books as to the death-rate among artificially fed babies. When we consider this low mortality at the conference, it would seem as if the death-rate mentioned comes in great part from the other large majority which are under the treatment of physicians who probably have not the training that the conference physicians have.

The question of weaning babies is an important one. I have found in private practice that great harm often comes from attempting to put a baby who has received only mother's milk for seven, eight or nine months, on other food. It will often refuse it for a week and become desperately ill.

DR. JOSEPH BRENNEMANN: We are perhaps apt to overlook the striking results obtained with such simple measures. That point should be emphasized. When we think of what the mortality ordinarily is, one is impressed with the fact that these results are striking. Practical infant-feeding cannot be learned in a hospital—it is an ordinary proposition. The vast majority of babies are fed in the home, and conditions in hospitals are entirely different. I am not saying anything against the work done in hospitals, but such a paper as this, giving such results, would certainly lead one to think that there is a good deal in the idea that babies ought to be fed at home as much as possible.

The Use of Dextrose Solutions in Acute Intoxication in Infants

DR. H. F. HELMHOLZ: In such cases, because of a severe diarrhea, food must be administered by the subcutaneous or

intravenous route. It has been customary to give simply a sodium chlorid solution, isotonic with the blood, or Ringer's solution. Recently Kausch called attention to the advantage of giving sugar solution instead of a saline solution. He used a 5 to 7 per cent. solution of dextrose, giving a liter either subcutaneously or intravenously. The sugar is not only well tolerated, but the worse the condition, the greater the sugar tolerance. In cases of cyclic vomiting, which are usually marked by an intense acidosis, saline-dextrose solutions by clysmas by the drop method have given good results. It seems probable, therefore, that dextrose added to Ringer's solution should act beneficially in cases of acute gastrointestinal intoxication marked by acidosis, extreme prostration, vomiting, diarrhea and collapse.

Our routine method of treatment is to withhold all food for from twelve to twenty-four hours, giving merely water or tea by mouth, and stimulating the failing circulation by the use of caffeine, camphorated oil, brandy and saline solution subcutaneously. The demand for food is great. All of the infant's resources are being exhausted by the disease. The only route for placing food in the body is the subcutaneous or intravenous. In such cases dextrose is the ideal agent to use. It can be given subcutaneously, say 50 c.c. of a 50 per cent. solution, without harm. Almost 60 gm. have been given, with only a trace appearing in the urine. The most important thing to ascertain is whether the dextrose solution is indicated, whether it has any effect on the rapid loss of weight, and whether its presence in the tissues leads to edema. Finally, what are the effects on the clinical picture?

The solution is prepared as follows: To 1,000 c.c. of freshly distilled water add dextrose, 60 gm.; sodium chlorid, 7.5; sodium bicarbonate, 0.2; calcium chlorid, 0.2, and potassium chlorid, 0.2. Filter and sterilize in flasks of about 100 c.c. capacity. The solution is given hypodermically, either by gravity or by means of a large syringe, in doses of from 50 to 200 c.c. It is injected under the skin of the abdomen or under the pectoral muscles. The smaller doses at shorter intervals are preferable.

We have given the solution in about twenty cases, most of the patients being *in extremis*. In not a single instance was sugar found in the urine. Unfortunately, the stools were not examined for sugar, although it is probable that only very small amounts of sugar left the body through that tract. It would appear, therefore, that the infant in a state of intoxication can tolerate from 4 to 6 gm. of sugar two or three times a day and completely utilize it. Whether or not concentrated solutions can be given with greater benefit is unknown. A study of the weight-charts shows that the water is retained better with the sugar than without it, so that the sugar solution is preferable to the salt solution. In several instances in which the toxemia was intense the loss of weight was comparatively slight, and at no time during the injection was there any palpable edema to explain the maintenance of weight. In some instances the weight was greater at the time of death than on admission. In only exceptional cases were the losses in weight such as one is accustomed to see in these cases. In some cases of intoxication there is apparently no effect from the use of sugar solution. In the majority of cases, however, there was quite a definite improvement (1) in the tendency to come out of the coma; (2) in the improvement of the turgor, and (3) in the circulation. In one or two instances it seemed to be the only thing that kept the infant alive.

DISCUSSION

DR. J. H. HESS: Did you notice the effect of the administration of dextrose on the acetone in the urine? How long did you keep these babies on the dextrose, on the average?

DR. H. F. HELMHOLZ: Usually we kept them on water for from about twelve to twenty-four hours, and then started them either on very minute amounts of *Biwicissmilch* or breast-milk. The other routine was about as we have been accustomed to doing. We kept up the use of dextrose solutions for longer periods after we started other foods, but otherwise the feeding was carried on just about as usual. We

could not obtain any urine until after giving the solution—and in one case it was twenty-four hours after.

DR. ALBERT H. BEIFELD: Did you find albumin in almost every case? It has seemed to me that an irritated kidney sometimes holds back the salt and sugar, just as we hear of a diabetes being controlled by a nephritis. If you had a nephritis in every case it might explain the absence of sugar in the urine.

DR. H. F. HELMHOLTZ: After we got further along, we obtained specimens of urine in which there was no albumin, but, as Dr. Beifeld undoubtedly knows, it is usually most severe. We found casts and albumin, but they did not seem to have any related function, nor did the retention of sugar seem to have any relation to the irritation of the kidney from the other cause.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Archives of Ophthalmology, New York

November, XLII, No. 6, pp. 577-691

- 1 New Instruments for Measuring Visual-Field Defects. C. B. Walker, Boston.
- 2 Some Forms of Retinal Tuberculosis. A. Knapp, New York.
- 3 Discussion of Crystalline Lens. E. Jackson, Denver.
- 4 Clinical and Anatomic Report of Case of Congenital Distichiasis. H. L. Bogle, Detroit, Mich.
- 5 Pathogenesis of Scleral Staphylocoma. A. F. Mattice, Seattle, Wash.
- 6 Weight of Infants' Lenses and Their Solids. C. A. Clapp, Baltimore.

Arkansas Medical Society Journal, Little Rock

November, X, No. 6, pp. 145-166

- 7 Skin Grafting. St. C. Cooper, Fort Smith.
- 8 Phenol-Petrolatum. S. S. Warren, San Angelo, Texas.

Boston Medical and Surgical Journal

November 27, CLXIX, No. 22, pp. 777-816

- 9 *Clinical Value of Wassermann Reaction. A. Post, Boston.
- 10 *Comparative Psychology in Relation to Medicine. R. M. Yerkes, Cambridge, Mass.
- 11 *Problems of Adolescent as Seen in Psychopathic Hospital Outpatient Department, Boston. W. P. Lucas, San Francisco.
- 12 *Transfusion by Means of Glass Cylinders. A. R. Klampton, Boston.
- 13 *Use of Bacterial Vaccines in Acute Septic Conditions of Oral Cavity Met with by Dentist. L. S. Medalia, Boston.
- 14 *Cancer Control. J. C. Bloodgood, Baltimore.
- 15 *Effect of Nitrogenous Waste Products in Blood in Chronic Interstitial Nephritis. M. Seymour, Boston.
- 16 Terminology of Medicine in Relation to Its Original Sources. S. Deland, Boston.

9. Value of Wassermann Reaction.—Post suggests that the Wassermann reaction should be regarded as a symptom like other symptoms, and in relation to other symptoms, it will prove a wonderful help. To insist on calling it a test, confuses rather than aids.

10. Comparative Psychology in Relation to Medicine.—Yerkes says there are no aspects of organic reaction which are not worthy of accurate measurements in a psychologic investigation. The reflexive and the instinctive often prove to be quite as important as the impulse or voluntary. Comparative psychology deals with facts and principles which are of extreme importance to the physician; it deals with these facts in a systematic, quantitative, law-evoking manner which renders it immediately serviceable to medicine.

The situation in Yerkes' opinion is this: A science of conscious behavior, introspective and quantitatively observational, comparative and rigorous in its demands for verifiability, is developing. Will those who are interested in medical education make use of it or will they continue to permit students to grapple with the problems of human nature without systematic training in the methods of studying conscious behavior, and without a good working knowledge of the facts and principles of human behavior? It is a case of "heads I win, tails you lose," for comparative psychology has much to give and medicine much to gain, and whether or not students of medicine avail themselves of its assistance, it will progress

steadily, little by little supplying the principles of organic nature which should enter into the foundations of our social sciences and guide in the varied applications of natural science.

11. Problems of the Adolescent.—During the last eight months Lucas examined 123 patients between the ages of 10 and 20 years; 71 per cent., or 88, of these showed some evidence that adolescence had some relation to the condition for which they were brought in. The reasons for bringing these cases in was mainly mental examination. Physical examination brought out the fact that over 39 per cent. of these individuals were normal; under par, 30.89 per cent.; nervous, 24.39 per cent.; those having speech defects, 12.19 per cent.; eye, 9.75 per cent.; ear, 4 per cent.; epilepsy, 5 per cent., and enuresis, 4.87 per cent.; also those having had previous convulsions, 6.5. Naturally, the greatest disturbance was in their volitional powers; a very large percentage being defective or retarded (57.7 per cent.).

12. See THE JOURNAL, Nov. 1, p. 1628.

13. Bacterial Vaccines in Acute Septic Conditions of Mouth.—Medalia attempts to show by a citation of cases that vaccine treatment is of value in acute septic dento-alveolar abscesses—even the worst types of mandibular impacted third molar abscesses having apparently yielded well to this treatment. Such cases with septic apical abscesses, especially the deep-seated ones or the so-called blind abscesses, acute and subacute, have been greatly benefited by the vaccine method of treatment. Medalia believes that there is a big field for vaccine treatment in acute and subacute dento-alveolar abscess cases and its wide-spread use will save considerable suffering and loss of teeth to the patient, and annoyance to the dentist.

14. Abstracted in THE JOURNAL, December 6, p. 2100.

15. Nitrogenous Waste Products in Blood in Chronic Interstitial Nephritis.—The effect of high and of low proteid diet on patients suffering from chronic interstitial nephritis, with increased arterial tension was studied by Seymour. Fourteen patients were selected, each case having an arterial hypertension, persistent low gravity urine, with small amounts of albumen, and rare hyaline casts. For five days the patients were given the regular hospital diet, which contained about 60 grams of proteid. At the end of this period the proteid content of the diet was increased and this diet maintained for seven days. By the sixth day they were given about 180 grams of proteid daily. During the next period of eight days, the proteid was reduced, so that they were given very small amounts, the daily average for this period being about 12 grams.

The nitrogen content of the blood was measured at the end of the normal hospital diet period, and at the end of the high and of the low proteid diet periods. Urinary nitrogen determinations were made daily, except on the days when the phenolsulphonephthalein tests were made. These latter were made five times during the course of the experiment. Out of the fourteen cases, eight showed an increase in the nitrogen content of the blood at the end of the high proteid period. Of these eight cases showing a nitrogen increase, six had edema of the face with puffiness of the eye-lids, and complained of nausea and headache. All of these patients vomited, and in each case refused food at the end of the sixth day. Two of the patients who showed the greatest increase in the blood nitrogen, had more marked symptoms than those showing a more moderate one. Two cases showing an increase in the nitrogen, had no symptoms.

Of the six patients showing no increase in the nitrogen of the blood, one had only edema of the face, two had nausea and vomiting with slight edema of the face, two were drowsy, dull, and complained of headache. One patient showing no nitrogen increase, had no symptoms. Two showed a simple irregularity, three no change, and one patient showed a lowering in the blood-pressure. There seemed to be no relation between the arterial tension and the low proteid diet during the eight-day period the diet continued. In some cases there was an irregularity, in some a rise, and in others a fall in the pressure; even though the nitrogen content of the blood was greatly diminished in every instance.