

these fruits have probably had a good deal to do with the rapidity of extension of colonies where the storage of food was made necessary by long ocean or desert trips.

#### VALUE OF INORGANIC ELEMENTS IN THE DIET

Animal experiments tend to show that the effect of diet on bones and teeth can be worked out with comparative ease, and there is no reason why the same cannot be applied to human bones and teeth. Liebig overaccentuated the value of protein in the diet, and dietary studies have been mainly confined to protein, fat and carbohydrate. We do not absolutely need fat or carbohydrate in the diet at all times, because we can synthesize them from protein; but we cannot synthesize calcium, phosphorus, iodine or any of the inorganic elements—at least, not in our bodies during life. If we take the relative abundance in the body as an index of importance of elements, we find, of course, that oxygen, hydrogen and nitrogen are common to both organic and inorganic compounds; excluding these, we find that the ratio of carbon to the inorganic elements is 4:1. In other words, even on this basis we should not devote more than four times the amount of time to the organic compounds that we should spend on the inorganic in nutrition; and we include among the organic the vitamins.

### *Clinical Notes, Suggestions, and New Instruments*

#### A NEW TYPE SIGMOIDOSCOPE

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This is simply a new type and not a new instrument. It embraces the better points of many of the old instruments, so that we have at last a practical sigmoidoscope for use in

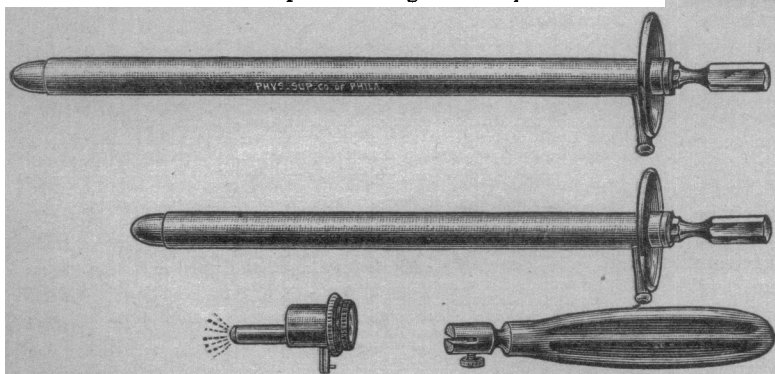


Fig. 1.—The 8 and 10 inch sigmoidoscopes; eye piece with a lensed lamp covered with its shield; glass window in place. When instrumentation is desired, the glass window is removed by unscrewing, while the lamp remains in place. The handle which is illustrated is superfluous and is not used in our work, and is provided only for those who may care to use it. The regulation type of pure rubber double bulb inflator is not illustrated here, and when used is applied to the spout of the sigmoidoscope.

examination and treatment. The first important feature of the instrument is the diameter of the lumen. The Tuttle and the Lynch sigmoidoscopes are seven-eighths inch in diameter. Those we found too large for routine use, as the patient is often distressed by the passage of an instrument of so great a diameter, and consequently this important examination in the routine study of our patient was often not attempted at

all, or abandoned after a first unsuccessful or painful examination, especially in nervous women. Dr. Horace Soper of St. Louis told us that he was using a sigmoidoscope of smaller lumen, and on endeavoring to purchase such an instrument we found that the short Axtell was the only one that had a smaller diameter in barrel. We then designed one of our own with a five-eighths inch diameter of barrel, and lighted at the distal end from the operator, thus requir-

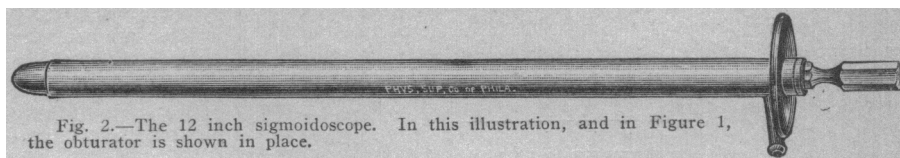


Fig. 2.—The 12 inch sigmoidoscope. In this illustration, and in Figure 1, the obturator is shown in place.

ing a light carrier and one of the smallest types of lamp, similar in construction to the Tuttle sigmoidoscope. This had many disadvantages in that the lamps frequently burned

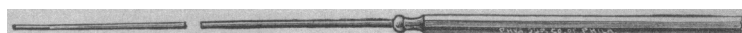
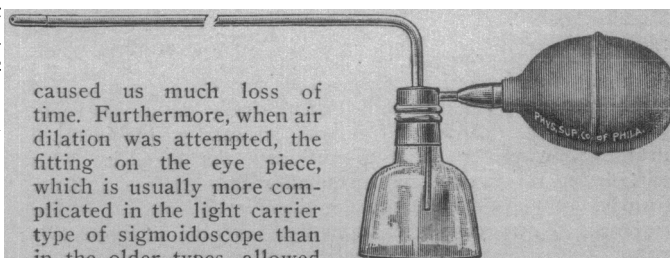


Fig. 3.—The applicator, 14 inches in length exclusive of the handle. The fenestrated spoon, the same length as the applicator, but not illustrated, can also be used for the purpose of pushing small masses of fecal material to one side as the tip of the sigmoidoscope is advanced within the sigmoid.

out or made poor contact, so that many times the light carrier would have to be withdrawn to permit readjustment of the lamp, as the light would suddenly fail us, and this alone



caused us much loss of time. Furthermore, when air dilation was attempted, the fitting on the eye piece, which is usually more complicated in the light carrier type of sigmoidoscope than in the older types, allowed the escape of much of the air directly into the operator's face.

Fig. 4.—This powder blower has a 14 inch long delivery tube. It, too, is used in conjunction with the sigmoidoscope in making treatments to the sigmoid by insufflation.

With these difficulties to be overcome, we conferred with Mr. James Brown of the Physicians' Supply Company of Philadelphia and, with his cooperation, evolved the present

instrument, by taking the lumen diameter measurements of the Axtell (five-eighths inch) and having sigmoidoscopes made running to 8, 10 and 12 inches in length. The Lynch type of illumination had been so satisfactory from the operator's standpoint that we adopted it by modifying it to this smaller barreled instrument. The result has been all that was hoped for. The illumination is perfect and always of equal distribution throughout the whole field. It is dependable, as lamps do not become easily unscrewed, thereby making imperfect contact. The lamp itself is large enough to stand fairly rough handling, compared with the smaller lamp. It does not burn out so readily, since it takes a greater voltage and does not require so fine an adjustment of the rheostat, which feature affords a great saving of time in operation. The lens, fashioned in the end of the lamp bulb, combined with the shield lens, throws a straight beam of light through the tube, which gives almost as satisfactory illumination when sent through the 12 inch as in the 10 or 8 inch sigmoidoscopes. Then, too, the lamp socket is eccentrically (peripherally) placed in the eyepiece, so that it is out of the way, and does not obstruct vision or prevent instrumentation. The whole eyepiece fits into the tube by a tapered socket or cone connection, and a glass diaphragm or window closes the eyepiece by a threaded joint. Thus no leaks can occur if one desires to use air dilation, which is

rarely required during the insertion of this sigmoidoscope.

The accompanying illustrations present these features. There are shown, too, the 14 inch powder blower and applicator used in treating the sigmoid. The spoon is not illustrated, but is very much like a dull uterine curet of small size mounted as is the applicator.

Current for the lamp can be supplied from a storage or wet cell battery, or from the adjustable rheostat that can be screwed into a universal socket of the direct or alternating street current of 110 volts. We find the latter most satisfactory.

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#### CALCULUS ANURIA

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This case is reported because of its rarity and unusual interest. One does not realize how rare the phenomenon is until there is an occasion to look up the subject, on which little has been written. So far as we have been able to review the literature, textbook and journal articles do little more than describe the condition, mentioning its occurrence and giving no detailed study of the cause of this interesting but puzzling renorenal reflex set up by the presence of a calculus in the opposite kidney.

#### REPORT OF CASE

Mrs. S., aged 37, was admitted to Roper Hospital, Feb. 6, 1921, with a diagnosis of pyelitis complicating a pregnancy of about four months. Cystoscopic examination revealed much mucopurulent material floating freely in a very congested bladder. A No. 6 ureteral catheter was obstructed in the right ureter about 5 cm. from the bladder. This obstruction was passed with a smaller catheter, and a large quantity of pus escaped into the bladder on removal of the catheter. Roentgen-ray examination revealed a large calculus filling the right renal pelvis, and a dilated pelvis and ureter on this side. Chemical examination of the blood revealed, for each hundred cubic centimeters: nonprotein nitrogen, 30 mg.; urea nitrogen, 24.4 mg.; uric acid, 1.6 mg.; creatinin, 1.2 mg., and sugar, 75.2 mg. The urine was cloudy and acid; examination revealed four plus albumin, four plus acetone, two plus diacetic acid, no casts, four plus pus and one plus blood. The blood count revealed: leukocytes, 6,280; small lymphocytes, 6 per cent.; large lymphocytes, 3 per cent.; large mononuclears, 1 per cent.; transitionals, 0; polymorphonuclears, 89.5 per cent. The blood pressure was 105 systolic and 65 diastolic.

The patient was relieved of her symptoms by cystoscopic treatment, and left the hospital against advice. She went home and was delivered normally at full term by her private physician. Nov. 27, 1921, about three months after delivery, she was readmitted to the hospital suffering with a sharp pain in the right lumbar area posteriorly. The pain was constant and radiated down the right leg. She suffered from nausea and vomiting up to three days before admission. About five days before admission she passed a large quantity of yellowish gravel, but no blood was observed. She had passed no urine since 9 a. m., November 25, and her attending physician had been unable to obtain any on repeated catheterizations. For the last four years she had had repeated similar attacks, but had had no anuria following them. Physical examination was negative except for a palpable mass over the gallbladder area. Because of the acute pain over each kidney area, we were unable to palpate the kidneys. The patient stated that on the morning of the 28th she voided about an ounce of urine, but neither the nurse nor the intern could verify this. At 9:45 on the evening of the 28th, after an anuria of eighty-four hours with no response to drugs or local measures, and with a pulse from 112 to 124, respirations 24, and temperature ranging from normal to 101.8, and severe toxic symptoms supervening, we took her to the operating room. The blood examination at

this time gave a total white count of 10,800 with polymorphonuclears 79% per cent.

The left kidney was cut down on and found to be blue-black, and very tense within its capsule. When the capsule was incised, the kidney popped out like a pea from its pod. A nephrotomy and decapsulation was done on this side. The right kidney was exposed, a nephrotomy and decapsulation done, and a large stone, which had destroyed the greater portion of the organ, was removed from its pelvis.

After a stormy convalescence and stay in the hospital for seventy days, the patient was able to go home. She still returns periodically for treatment. Because of an infection of the left kidney and decreased function on this side, 7.5 per cent., we have been unable to remove the right kidney.

### New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

**FERRO-SAJODIN.**—Ferioben.—Ferro-sajodin is a basic, ferric iodobenenate, approximate formula  $\text{Fe}(\text{OH})(\text{C}_{10}\text{H}_7\text{ICOO})_2$ , which contains at least 5 per cent. of iron and at least 24 per cent. of iodine.

**Action and Uses.**—Ferro-sajodin has the actions of iodides and iron. It is claimed to be more stable and palatable than ferrous iodide, not to injure the teeth or to disturb the gastrointestinal tract, and that it is free from a constipating tendency. It is claimed that ferro-sajodin is easily absorbed, but that it is slowly eliminated, thus assuring a more prolonged effect than that obtained from inorganic iodides and iron compounds.

Ferro-sajodin is indicated in the conditions in which iron and iodides are employed, such as anemia, rickets, syphilis, chronic bronchitis and arteriosclerosis with anemia.

**Dosage.**—From 0.5 to 1 Gm. (8 to 15 grains), three times daily. For children from 0.25 to 0.5 Gm. (4 to 8 grains) three times daily. Ferro-sajodin is sold in the form of tablets only. These should be masticated before swallowing or crushed when administered to children.

Manufactured by the Bayer Co., Inc., Rensselaer, N. Y. (Winthrop Chemical Co., Inc., New York, distributor). No U. S. patent. U. S. trademark 61,730.

#### Ferro-Sajodin Tablets, 8 grains.

Ferro-sajodin is a reddish brown, odorless and tasteless powder; unctuous to the touch; insoluble in water or alcohol; slightly soluble in chloroform, ether and warm fatty oils.

Ferro-sajodin melts to a brownish-black liquid from which iodine vapors are emitted abundantly. Shake about 0.1 Gm. of ferro-sajodin with 5 Cc. of chloroform and 5 Cc. of diluted hydrochloric acid; allow the acid liquid to separate; decant a portion of it and treat it with an excess of ammonia water. A red precipitate of ferric hydroxide is produced.

Heat about 0.5 Gm. of ferro-sajodin in a reflux apparatus for thirty minutes with 15 Cc. of a 15 per cent. solution of potassium hydroxide in methyl alcohol; cool and filter, taking care to reserve the filtrate. Treat the residue on the filter with diluted hydrochloric acid and filter. Dilute 1 Cc. of the filtrate with 10 Cc. of water and add a few drops of potassium ferrocyanide solution. A blue color results. Acidify the reserved alkaline filtrate with dilute sulphuric acid and filter. To a portion of the filtrate, add a few drops of sodium nitrite solution and shake with chloroform. The chloroform layer is colored violet.

Mix about 6 Gm. of ferro-sajodin, accurately weighed, with 10 Gm. of anhydrous sodium carbonate; place in a platinum crucible; cover with more of the anhydrous sodium carbonate, and heat slowly until the mixture is melted. Cool, dissolve in water so far as possible, filter and wash the insoluble portion with water. Dissolve the insoluble portion in warm, diluted hydrochloric acid; add 0.5 Gm. of tartaric acid; make alkaline with ammonia water, and add an excess of yellow ammonium sulphide. Allow to stand over night; collect the precipitate; wash it with dilute ammonium sulphide; dissolve it with warm, diluted hydrochloric acid; add an excess of bromine water, followed by an excess of ammonia water; collect the ferric hydroxide, dry it; heat to ferric oxide and weigh in the usual way. The weight of ferric oxide corresponds to not less than 5 per cent. of iron.

Boil for one and one-half hours in a reflux apparatus about 3 Gm. of ferro-sajodin, accurately weighed, with 120 Cc. of 15 per cent. methyl alcohol solution of potassium hydroxide, cool, add 1 Gm. of powdered animal charcoal, and wash into a 500 Cc. volumetric flask with water. Filter through a dry filter, rejecting the first portions of the filtrate; treat 250 Cc. of the filtrate with sodium acid sulphite solution; acidify with nitric acid, add 40 Cc. of tenth-normal silver nitrate, and titrate the excess of silver with tenth-normal potassium sulphocyanate. The silver nitrate consumed corresponds to at least 24 per cent. of iron.