

Further than this, Dr. Evans in his article in the *New York Medical Journal* of March 6, 1886, makes no mention of and gives no credit either to the Semple Inhaler or to the Globe Inhaler of Beseer.

Dr. Evans' apparatus is faulty in two particulars; the inhaling tube is long and is complicated with three glass globes which must be kept thoroughly antiseptic if we are to assign any dangerous activity to the numerous germs of disease. The patient under treatment must moreover inhale and likewise exhale through this one tube, the three glass globes and the Wolff bottle which contains the medication; each patient ought therefore to have an entire atomizer reserved for his own particular use, since it would be practically impossible to cleanse *thoroughly* all this complicated arrangement after each application.

Dr. Evans claims, however, as an advantage in favor of his apparatus that the vapor will resist condensation for twenty minutes. But is easily demonstrated that with any form of atomizer constructed upon these principles, the increase in the resistance to condensation depends *directly* upon the increase in the specific gravity of the fluid atomized and not upon the particular *shape* of the atomizer.

The very fact, however, that the vapor refuses to condense for so long a period as twenty minutes is an objection rather than an advantage to the method of treatment. Everyone grants that ordinary atomizers are of little benefit in the treatment of lung diseases, because the vapor from them condenses almost entirely upon the mouth and pharynx. At the same time no physician would demand that a patient suffering from pulmonary phthisis should actively inhale a medicated vapor longer than twenty or twenty-five minutes at any one time because of the physical exhaustion that would follow a longer treatment. If then the vapor that is inhaled resists condensation for so long a period as twenty minutes, Dr. Smith claimed that it is *just beginning* to be deposited upon the bronchial tubes when the treatment is stopped. He had been better satisfied with the results obtained by a vapor that did not resist condensation for nearly so long a period as that claimed by Dr. Evans.

At the same time Dr. Smith claimed it to be a fallacy that by the use of either the Semple or the Evans' Inhaler atomized vapor can be deposited upon *lung cells*, especially if they are diseased so that they are unable to be readily expanded. The vapor when finally churned in these inhalers may be deposited and very likely is deposited upon the larger bronchial tubes, but we must remember that bronchial tubes are very different from air vesicles and that the volume of air which we ordinarily breathe—the *tidal volume*—reaches *directly* only the trachea and large bronchi, but enters the air cells in obedience simply to the law of the diffusion of gases.

Unless, therefore, some of the external pressure of the atmosphere be removed from the chest walls, as it is in the Williams' Cabinet, so that the *complemental* volume of air can be inhaled *involuntarily* into even remote air vesicles, the only medication that can effectually reach any decided area of lung cells must be gaseous in form. But however finely you may divide aqueous vapor under ordinary conditions of

temperature and atmospheric pressure, you cannot make it gaseous, for a gas is not condensed except under enormous pressure and at exceedingly low temperatures.

Dr. Smith accordingly, while praising the inhalers that were exhibited, maintained that to derive their greatest benefit they should be used in conjunction with some form of the Pneumatic Cabinet. He has used the inhaler with the cabinet since last December, and has found the results to be highly satisfactory and encouraging.

Dr. BOWDITCH said that one of the important objects of any inhaler was to force the substance to be inhaled into the pulmonary structures as much as possible. Whatever the arrangement for inhalation may be, the object to be attained is the pulverization of the substance, and its forcible propulsion into the lungs. The inhaler shown by Dr. Smith is always employed in conjunction with the Pneumatic Cabinet, as an aid to its introduction or propulsion into the deeper parts of the pulmonary recesses.

Dr. KNIGHT stated that the instrument exhibited by Dr. Galvin was capable of producing a finely pulverized fluid, and he had never seen anything so fully answering this demand as the one shown at this meeting.

#### MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

*Stated Meeting, May 19, 1886.*

VICE-PRESIDENT, WM. H. TAYLOR, M.D.,  
IN THE CHAIR.

T. E. MCARDLE, M.D., SECRETARY.

DR. BERMANN presented a bottle full of

POLYPI REMOVED FROM A PATIENT'S NOSE,

where they had been growing for the past seven or eight years. The turbinated bones were atrophied and the septum driven to one side. Some of the tumors were gelatinous, but most of them were of a fibroid character.

DR. JOS. T. HOWARD read a paper on

UROGLAUCIN.

About 1845 Heller discovered in urine a peculiar substance which he called uroxanthine, which, by further treatment with acid reagents at a high temperature, yielded a blue uroglaucon and a red pigment, urrhodine. These coloring matters, he proved, were similar to those which had been previously discovered by Braconnot, in the urine, composing a substance which he (Braconnot) called cyano urine, and Virchow and Kleitzinsky showed the identity of urrhodine with indigo red, and uroglaucon with indigo blue. It is the latter, apparently, occurring in the urine of a patient under my care, that it is proposed to speak of now. I say apparently, because the sequel may prove it to be something else; consequently, before detailing the case it may be of interest, if not edifying, to briefly consider the history and sources of "indigo blue," with its relation to the urine generally.

Indigo blue was first mentioned by Dioscorides as

*indikon*, next by Pliny as *indicum*. When first introduced into England it was called "*indico*." The principal source of this familiar coloring matter is, as you well know, the numerous indigiferous plants, mainly the *indigifera dinctoria*, *anil*, *satisneurium* and *polyganum*. In the process of manufacturing indigo the plants are steeped in water for a few moments, and after their removal from the liquid the latter is exposed to the air and frequently agitated to facilitate the absorption of oxygen, which produces the blue color in the water. If the water be allowed to rest awhile indigo is deposited as a pigment insoluble in water, alcohol, oils, dilute alkalies, and hydrochloric acid, but if slowly heated it volatilizes in purple vapor, which afterwards becomes condensed in delicate crystals, the chemical composition of which is expressed by the formula,  $C_{16}H_8NO_2$ .

In the urine, as stated by Heller, indigo was found in combination with *urrrhodine*, forming the compound *uroxanthine*; from which his process of extracting *uroglauclin* was somewhat as follows: Urine recently voided is mixed with a hot solution of acetate of lead filtered and freed from an excess of the acetate by sulphuretted hydrogen, and boiled to free it from excess of the latter. The hot fluid is now constantly stirred and gradually added to an equal volume of concentrated fuming hydrochloric acid, which, if *uroglauclin* be present, should cause it to assume a greenish and very dark blue color. If the mixture assume a violet or red tint only, no indigo is present. If it does become blue, as just stated, and is allowed to stand for some time, a copper-red, shining, metal-like, dark crystalline pellicle appears upon the surface. After twelve hours the fluid is diluted with an equal portion of cold water, well agitated, and put aside for twenty-four hours, when a heavy deposit is formed which is separated by filtration and washed with boiling water until the washings have a neutral reaction; it is then washed with dilute spirits of wine and dried over sulphuric acid in the water stove. The dry filter is now washed with pure ether as long as any red color, *urrrhodine*, can be obtained. For this purpose large quantities of ether, and a proportionate amount of time, are required to get rid of the *urrrhodine*. Next, all that portion of the filtering paper which shows no blue deposit is cut off, and the remainder, divided into small pieces, put into a balloon and boiled strongly with absolute alcohol. As often as the alcohol assumes a sky blue, or greenish, color, it is poured off and a new portion added until, by protracted boiling, it becomes entirely colorless. The alcoholic extract, which has an acid reaction, is filtered whilst boiling hot, then evaporated down to one-half, and put aside in a well-stoppered bottle. When the fluid cools *uroglauclin* is deposited in spider-like petaloid.

The first record of blue coloring matter occurring in the urine is attributed to James Planeus, 1767; the first chemical description of a blue or violet coloring matter being found in the same was given by Braeonnnot, who, as before mentioned, called it *cyano-urine*. In one of Braeonnnot's cases the urine, voided with difficulty, was of an intense yellow, which after standing gave a blue deposit. He relates another

case reported by M. Julia, in which the blue color was attributed to the presence of prussiate of iron. (See *Ann. de Chem. de Phys.*, xxix, p. 252.) Braeonnnot was followed in his discovery by Heller, Prout, and others.

Now in no instance on record, so far as I have been able to ascertain, except, perhaps, the cases of James Planeus and of M. Julia, can it be inferred that indigo was ever found spontaneously dissolved in the urine, but when present in that fluid was discovered only after a long and tedious chemical process such as has been detailed above; nor is there any account given of a simple blue urine having been emitted; consequently the case that I now present is the third, if not the first, to be chronicled in which urine of a dark blue color has been voided. For such indeed it was at that time, and did not become blue from decomposition after standing, as was the case mentioned of Braeonnnot, and which it might have done in that of M. Julia, either within the bladder or after emission.

It is hardly probable, in the case now presented, that the change occurred whilst the urine was within the bladder, because the patient had, but a very short time before voiding the blue, passed a clear-colored urine; evidently, then, it was not in that vessel sufficiently long to undergo fermentation, although indican possibly may have been present in the urine previously passed without attracting attention, for Schunck says: "Urine containing *uroxanthine* exhibits no remarkable or peculiar appearance whatever to the naked eye; it is acid clear and of the usual color." This learned investigator found indican so often in urine that he concluded it must be a normal constituent of the fluid. Heller, however, found it most frequently in persons with disease of the kidneys and spinal cord—a circumstance which, as regards the last mentioned, coincides more nearly with the pathological condition of my patient, who for some time had been laboring under a severe attack of sciatica, in which the *medulla spinalis*, or its appendages, were more or less involved.

The following is the case: W. R., æt. 63, tall, of a spare frame, and sanguino-melancholic temperament, general health good, complained of great pain in the back and down the left lower extremity along the course of the great sciatic nerve and its branches, which, after a regimen of counter irritants, purgatives, and alteratives, showed signs of abatement and gave promise to the patient of an early recovery. One day after the usual morning visit, at which time all things seemed to have been progressing favorably, I was sent for in great haste, and upon entering the chamber of the man found him and his family in great consternation and, perhaps, some little alarm, on account of the blue urine exhibited, which the patient had but a short time before passed. Observing the anxiety of his distressed wife, and others around him, the invalid affected to treat the matter lightly, and jocosely remarked that he "had often heard of 'blue bloods,' but was not before aware of his being one of them." Although unable at the time to explain the phenomenon, I was satisfied from the patient's general condition that there was no cause for

uneasiness regarding him, and so expressed myself. Upon examining the urine I found it to be of a deep indigo-blue color, and being assured that it had been voided in that condition I was satisfied. If proof had been necessary it was present in stains upon the bed linen.

I very much regret that a portion of this urine was not taken for chemical investigation. How indigo is obtained from indigiferous plants, uroanthine, and the urine itself, has already been explained; perhaps, by reverting to that part of the subject we may be obtain at least a negative clue to its formation in the case before us. The improbability, in my case of the blue color having resulted from decomposition of the urine within the bladder, or after it passed into the bidet, has been considered, and we know it was not subjected to any chemical process similar to that before detailed. Then, from whence came it? Perhaps it originated in the alimentary canal and was taken up by the absorbents through which it found its way into the blood, causing the patient to be, as he indeed supposed himself, blue blooded; from the blood it was eliminated by the kidneys, passed into the bladder, and from thence into the vessel. This is a very rational conclusion, when we consider the fact that the patient had been for some time taking iodide of potash, and having taken a meal that morning composed principally of amylaceous substances, it may be that some of the iodide remaining in the stomach was decomposed by the gastric juice setting free the iodide, which, coming in contact with the starch in solution struck the blue color which was imparted to the blood in the manner indicated. This deduction is sustained by the well-known fact that one millionth part of iodine will give the blue color to a solution of starch outside of the body; from which it may be reasonably inferred that, in the instance in question, the same reaction occurred within the body; but if this be the case, was it uroglaucon or simply a blue color?

DR. ACKER had seen one such case in an hysterical woman who was suffering from chronic Bright's disease. She passed a pint of urine of a decidedly blue color. Uroglaucon has been discovered when disease of the alimentary tract is present; also in granular disease of the kidney.

DR. W. W. JOHNSTON presented a specimen of  
PERITONITIS IN TYPHOID FEVER, WITHOUT PERFORATION.

DR. A. Y. P. GARNETT disagreed with Dr. Johnston as to the diagnosis. The only specific evidence present was slight enlargement of Peyer's patches. Was there not some tubercular degeneration of the mesenteric glands? Peritonitis may occur in many ways and from many causes.

DR. JOHNSTON contended that the characteristic lesions of typhoid fever were present. There are no determining symptoms except a morning decline and an evening exacerbation, together with the duration of the fever. Of course all local inflammations must be excluded. In the case under consideration the fever had lasted two weeks, with a morning decline and an evening rise of temperature. At the autopsy

he found enlarged and inflamed Peyer's patches and solitary glands. There was also acute enlargement of the mesenteric glands.

DR. TAYLOR remarked that John Harley declares that in the Delta of the Mississippi some cases of malarial fever are found which cannot be distinguished from typhoid fever, because ulceration of Peyer's patches is present.

DR. JOHNSTON said he would include such cases under the head of typhoid fever.

DR. D. S. LAMB presented a specimen of  
PYO-SALPINX.

Uterus and appendages covered generally with lymph. Right Fallopian tube, distal portion, dilated and filled with pus, which readily escaped from fibrinated end, on pressure, into peritoneum. Ovaries showed small aqueous cysts.

From Mrs. C., aged about 35. A few hours after a fright on April 27, she had acute pain in the abdomen, followed by general peritonitis, and death one week afterwards. The necropsy showed the intestines distended with flatus, all the abdominal viscera more or less united by adhesions, and a large quantity of pus in the cavity. The explanation of the case seems to be that the pus from the Fallopian tube found its way, at the time of the fright, into the peritoneal cavity and set up general inflammation, from which she died.

DR. LAMB also presented a

LARYNX AND PORTION OF TRACHEA OF GENERAL  
TUBERCULOSIS.

They were taken from a man aged about 30, who had general tuberculosis. The mucous membrane shows many tubercles of the size of small pin heads, projecting from the surface; large ragged ulcer on under surface of base of epiglottis; another on each vocal cord, which was nearly destroyed; one on left cricoid, and several in trachea.

*Necropsy.*—Much emaciation; dura mater normal; arachnoid showed numerous opacities, especially over sulci of convexity; Pacchionian bodies abundant along longitudinal sinus; pia mater along each middle cerebral artery showed minute tubercles, thick lymph and adhesions; there was lymph also on upper surface of left cerebellar hemisphere near median fissure. Brain substance generally consistent and normal, but fornix softened to a pulp; softening also on under surface of right optic thalamus; ventricles much dilated and full of turbid liquid; right choroid plexus indurated; small cavity in pineal gland. Lungs showed old adhesions, especially at apex of right: filled with miliary tubercles; large vomicae in upper lobes. Liver normal. Spleen somewhat lobulated, firm old adhesions. Pancreas normal. Stomach not opened. Small intestine; lower portion showed ulcers, mainly occupying Peyer's patches, varying in size, and having the long diameter parallel with intestinal axis; corresponding peritoneum covered with minute tubercles and bands of adhesion. Vermiform appendix showed hour-glass contraction about midway of the tract; mucous coat of that portion opening into caecum was deeply ulcerated; terminal portion nearly closed by the con-

traction named and filled with pus; its mucous membrane entirely destroyed by ulceration. Cæcum showed ulceration. Mesenteric and gastro-hepatic glands enlarged. Suprarenal capsules showed small tubercles (?). Kidneys normal. Bladder distended.

## MISCELLANEOUS.

INTERNATIONAL CONGRESS.—The subject of Public and International Hygiene is likely to occupy an important place in the discussions of the ninth International Medical Congress, or rather of its fourteenth Section. We are glad to see that Mr. Simon is anxious to attend the Congress and take Vice-Presidency of the Section. Mr. Simon, indeed, speaks in his letter responding to the invitation with some doubt as to his power to attend, but with a clear intimation of his desire to do so. Dr. B. W. Richardson and Dr. Thudichum both reply in most cordial terms to similar invitations, and accept a similar office. To those who know the imperfect health which Mr. Simon has lately enjoyed, the significance of his conditional acceptance is very great. The promoters of the Congress will take this as a sign of British good will towards their great and responsible undertaking. The important subject of International Quarantine is to be raised by the president of the section, Joseph Jones, M.D., of New Orleans. We could send to the discussion of such a subject no greater authority than Mr. John Simon. We are glad to be able to report a very general desire among leaders in London to be present at Washington in 1887. Whatever hesitation they felt some time ago in view of the divided state of feeling in America is now steadily giving place to a desire for the success of the Congress, and a wish to do anything they can to further it. We feel quite justified in saying that our best men in England and Scotland are preparing to go if they get any indication that their presence will be acceptable. Sir Andrew Clark, Sir Spencer Wells, Professor John Chiene, Professor Fraser, and we believe Sir William Turner, are all, according to our information likely to go.

It is not America alone that is interested in the success of the meeting at Washington, but the profession throughout the whole world, and we might add the world itself. When our profession meets internationally it is of good omen. We not only stimulate fraternity and scientific rivalry amongst ourselves, but every thought in advance and every medical discovery is a great boon for the human race and for all nations. We urge on members of our profession in the empire to strain a point to be at Washington on or before September, 1887, where, if report is to be trusted, a very hospitable reception awaits them.—*Lancet*, August 7, 1886.

THE HYGIENE OF THEATRES.—Given a spacious theatre, crowded during an evening performance for a period of hours, what is the difference of the effects on its atmosphere produced by the electric light or by gas, particularly as to the temperature and the

generation of carbonic acid? Such is the problem which Dr. P. Renk, Professor of Hygiene at Munich, has just set himself to solve. Taking the Theatre Royal of that city, which is lighted by 1400 lamps on the Edison system, he tested the two kinds of illuminants, with the following results: During a representation which lasted from 5:30 P.M. to 10:15 P.M., and was witnessed by 1790 people, he found that while the rise in temperature in the pit was 11.1° C. with gas, it was only 7.7° C. with the electric light, and that in the upper gallery it was 10.7° with the former, and not more than 7.4° with the latter. As to the increase in the production of carbonic acid, the results were equally important. In the pit it was 2176 with gas to 1221 with the electric light, and in the upper gallery as 2855 with the first to 1430 only with the second.—*Medical News*, July 24, 1886.

### OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT. U. S. ARMY, FROM AUGUST 21, 1886, TO AUGUST 27, 1886.

Major A. A. Woodhull, Surgeon, granted leave of absence for fourteen days, to take effect on or about Sept. 1, 1886. (S. O. 197, A. G. O., Aug. 25, 1886.)

Major M. K. Taylor, Surgeon, leave extended one month. (S. O. 195, A. G. O., Aug. 23, 1886.)

Capt. J. V. Lauderdale, Asst. Surgeon, granted leave of absence for two months, with permission to apply for one month's extension, when his services can be spared. (S. O. 195, A. G. O., Aug. 23, 1886.)

First Lieut. Chas. M. Gandy, Asst. Surgeon, on expiration of his present leave of absence, relieved from duty in the Dept. of the East, and assigned to duty in the Dept. of Texas. (S. O. 195, A. G. O., Aug. 23, 1886.)

### OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING AUGUST 28, 1886.

Clark, John H., Medical Inspector, ordered to special duty, Portsmouth, N. H., and Widow's Island.

Kindleberger, D., Medical Inspector, ordered to hospital, Washington, D. C., Oct. 1, 1886.

Gihon, A. L., Medical Director, ordered to hospital, Mare Island, Cal., Oct. 15, 1886.

Robinson, Somerset, Medical Inspector, detached from hospital, Mare Island, Cal., Oct. 15, 1886, and wait orders.

Spear, J. C., Medical Inspector, ordered to Naval Laboratory, New York, Sept. 28, 1886.

Bloodgood, Delevan, Medical Director, ordered to hospital, Norfolk, Va., Sept. 29, 1886.

Taylor, J. Y., Medical Director, ordered to Naval Laboratory, New York, Sept. 29, 1886.

Deau, R. C., Medical Director, detached from Naval Hospital, New York, and wait orders.

Simon, W. J., Surgeon, detached from U. S. S. "Constellation," and special duty at Naval Academy, Annapolis, Md.

Henry, C. P., Asst. Surgeon, ordered to hospital, Philadelphia, Pa.

Pitts, H. B., P. A. Surgeon, detached from hospital, Philadelphia, Pa., and wait orders.

Stone, E. P., Asst. Surgeon, ordered to receiving ship "New Hampshire."

### CORRIGENDUM.

In Transactions of the Chicago Gynecological Society, June 18th—appearing in the last issue of *THE JOURNAL*—Dr. Wm. H. Byford is reported to have read a paper entitled "A Study of the Cause and Treatment of Pelvic Hematocoeles." Dr. H. T. Byford was the author of the paper.