

characteristic "whoops." The expectoration is watery, sometimes bloody. In many cases vomiting follows the paroxysms by mechanical irritation. The vomiting in return can cause disorders of the digestive apparatus. The whoops at times occur as often as every half hour, and as thereby the cyanotic condition which accompanies the whoops occurs too frequently, they lead to asphyxial convulsion and even death.

In the respiratory apparatus the irritation causes, in many instances, capillary bronchitis and catarrhal pneumonia. After duration up to ten weeks the paroxysms are less severe, show themselves more rarely and the disease goes over into the declining stage. At this time the sequelæ or secondary lesions mainly demand our attention.

As we have seen, the disease is a local one. It primarily affects only the larynx; all other symptoms are secondary. This circumstance forms the basis of our treatment. The disease is local—ergo, we treat it locally; it is of neurotic character—ergo, we give a drug that acts upon the nerves.

With contagious local diseases, rational local treatment consists in destruction of the contagion by antiseptics—the most powerful is the most rational. Therefore every local application of any antiseptic improves to a certain degree pertussis. If we cast a glance at the literature, nearly everything was tried; phenol, boracic acid, thymol, resorcin, naphthalin, creasote, benzol, bromoform, mercurials, etc., but they all more or less are of irritating action upon the surface they are brought in contact with, or if not irritating, their action is so mild that their therapeutic effect is as mild too. The experience of the last few years proved the superiority of peroxid of hydrogen over all other antiseptics, except when we have to handle metallic instruments. An exception which interferes not in pertussis.

In pertussis, I use the peroxid with great success for local applications in this way: the child's head is leaned backward and held firmly, another person pulls out and depresses the tongue to bring the glottis into good view; then by means of a bulb atomizer consisting of glass and rubber only, I direct a spray of peroxid of hydrogen solution toward the larynx and if possible through the glottis. This is much facilitated if the child is old enough to pronounce the sound *ā*.

I always prefer the 30 volume peroxid of hydrogen (hydrozone) and dilute it in the following manner: hydrozone, one part; distilled water ten parts; glycerin one and one-half parts.

If the parents are docile they can be instructed to repeat the application twice or thrice a day. If the physician has a chance to apply it himself, he does well to make the solution fresh every time. At all events it should be made fresh every other day on account of this mixture being unstable.

Of all drugs only one has a really aborting influence upon pertussis, the old reliable, often abolished and always restored belladonna. The only secret of its right administration is the circumstance that we have to give such doses to get the belladonna action; the flushes, (Jacobi); otherwise the administration is without value.

A child of 2 years requires 6 drops of the tincture, three times a day; with the age the dose has to be increased to the proportion of 1.00 as a maximum single dose for an adult (gtt. xxv).

The root, the extractum alcoholicum fluidum can be given to infants of six to eight months in doses of 0.01 t.i.d., children of 3 to 4 years require of the same 0.3. Atropin may take the place of belladonna, beginning in a child of two years with 0.00065 t.i.d. and increase proportionately.

All complications must be abated in time, else our patient will be emaciated. If vomiting occurs at the paroxysms, give menthol. If there be gastritis and catarrh of the bowels, give calomel, bismuth, or still better glycozone. Often we meet gastralgia; then I prescribe for a child over 2 years:

R Belladonnæ, tinct. . . . .	2.00.
Mentholis. . . . .	2.50.
Spir frumenti. . . . .	10.00.
Glycerin . . . . .	20.00.
M.D.S. Teaspoonful every two hours.	

Glycozone administered in the proportion of two teaspoonfuls, diluted in a wineglass full of water, gave me the most gratifying results in acute cases.

Are the paroxysms severe, we can easily control the spasms by an application of cocain to the larynx.

For the general treatment we shall advise fresh air, good nourishment, tonics and inhalations of ozone. With such treatment the disease can be cut off to a period of only a few weeks.

## A GLIMPSE OF IRISH SURGERY.

BY N. SENN, M.D.

CHICAGO.

The wear and tear incident to a large hospital practice, the fatigue following the work during a long college session, and the unrest attending the demands of a progressive and exacting profession made it absolutely necessary for me, this year, to tear myself away from my sphere of activity and transplant myself to some foreign country to seek a much needed mental rest. I selected for this purpose Ireland, Norway and Sweden. It was my object to combine recreation with a study of the clinical advantages to be found in these countries. After an unusually smooth passage of less than seven days, on one of the palatial Cunard ocean greyhounds, I landed at Queenstown Saturday, July 13. At this time of the year, Ireland is at its best, the deep green of the lawns and meadows imparting to the landscape a most pleasing aspect. The stranger here has no difficulty in recognizing the nature of his environment when he sees and hears the ruddy, talkative cab driver, ever ready to give him the first ride on the Irish soil. The open cart is the vehicle peculiar to this country. It is used almost invariably to convey strangers and citizens to their place of destination quickly, if not in the most gentle manner.

The city on my arrival was undergoing one of those convulsive political movements incident to a general election. The political issues were discussed in a most animated manner on the streets, in all public places and in front of churches before and after service. The women appeared to be, if anything, more enthusiastic than the men. The newspapers were brimful of accounts of political meetings and speeches, and the American looked in vain for news from his native country. The Irishman is a born orator and politician. The humblest cabby admires and honors oratory and takes a lively interest in the issues of the day. Eloquence sways the views and actions of the public masses more than argument. The man who can make the best speeches

has the first and last claim upon the favor of the people.

From what I have seen and heard, I am satisfied that the great question which has agitated the Irish people for years—the land ownership, will be amicably settled by the ballot box and not by the sword. What this country needs is not a separate government, but a more just and equitable disposition of the land question. The possession of a home, no matter how humble this may be, makes its inhabitants better citizens. As soon as the Irish soil is owned by Irishmen, the burning question now before the people will be disposed of, to the mutual advantage of both countries.

The first medical center in Ireland from the south is

#### CORK.

This is a typical Irish city of about 100,000 inhabitants. The dialect, customs and habits of the people have not been much affected by outside influences. The most important hospital is the Northern Infirmary. This institution is under the management of the Sisters of Charity. It has recently been enlarged and many improvements have been made. It is a charitable institution where all the poor sick and injured find the doors wide open during all hours of the day and night, regardless of creed. The Sister Superior will soon celebrate her golden jubilee. She has served the order faithfully for nearly half a century. Although advanced in years, she retains the vigor and ambition of her youth. Her history would furnish ample material for an interesting story, replete with many acts of heroism and stirring events. She served on the battle-fields of the Crimean War and smoothed the pillow of many a poor soldier who died of cholera in Algiers. She is the beloved sister of the distinguished Bishop of Cork, the most Rev. Dr. O'Callaghan. Brother and sister work incessantly in one common cause—the relief of suffering of the deserving sick poor.

It is at the suggestion, and through the influence of the Bishop that a training school for nurses has recently been established in the Northern Infirmary. Seven robust rosy-cheeked young women are now serving as probationers, who furnish the nucleus of a noble institution, the blessings of which will soon reach the rich and poor alike. The surgical clinics in this hospital are conducted by Professors Sullivan and Hobart. The hospital furnishes a rich material for the teaching of accidental and emergency surgery. Fractures can be studied here to great advantage. Antiseptic rather than aseptic surgery is practiced here.

#### DUBLIN.

This is the great center of Irish surgery. The city with its numerous suburbs contains nearly half a million of inhabitants which furnish an abundance of clinical material for the two medical schools and the many hospitals.

It is unfortunate that this old and otherwise enterprising city does not possess a general hospital where the clinical material could be centralized and made more available for clinical teaching. Not any of the hospitals contain more than 120 beds and these, where the clinical teaching is done, are often distant from the medical school to which they are attached. The teaching of clinical surgery of the Trinity Medical School, by Professor Bennett is done at Sir Patrick Dun's Hospital. This hospital is a very old one and

lacks many of the modern improvements which are so essential in the practice of ideal surgery. Notwithstanding the many defects, excellent results are obtained. Professor Bennett has made the study of fractures his life work. A visit with him to the Pathological Museum of Trinity College is a rare treat. Hundreds of the most interesting specimens of all kinds of fractures are shown and explained. The museum is especially rich in specimens illustrating fractures of the neck of the femur and Colles' fracture. The classical specimens which enabled Colles to describe a special fracture through the lower end of the radius which bears his name can be found here, and constitutes an object of increasing interest to the present occupant of the chair of surgery.

Professor Bennett has made a most instructive collection of specimens, illustrating fractures of the first phalanx of the thumb. It appears from this collection that fracture of this bone occurs as frequently as fracture of all the remaining phalanges of the hand.

This museum contains also the skeleton of the famous Irish giant. The Professor is of opinion that it represents a good illustration of acromegaly. The equally famous "card player of Cork" enriched the collection by furnishing it with a skeleton illustrative of extensive and far advanced myositis ossificans. The new bone is everywhere in connection with preëxisting bone, no floating bone being found at the post-mortem, which demonstrates conclusively that this disease is not primarily an affection of the muscles but of the periosteum, the muscles serving chiefly the purpose of a temporary framework for the bone-producing process. The disease begins in the bone-producing tissues corresponding with the origin or insertion of the muscles. Many of the large muscles, notably those of the thighs and shoulders, in this case have been entirely replaced by bone, the muscles in advance of the osteo-genetic substance having been removed by degeneration and absorption.

Numerous specimens of so-called rheumatoid arthritis, which have been deposited in this museum, show the frequency with which this disease occurs in this country, and to what extent pathologic conditions are produced in its advanced stages. The specimens show well the various stages of the affection, from a slight enlargement of the head of the femur and limited deposits of new bone upon the head, neck or trochanteric regions, to complete immobility of the joint by the formation of enormous, rough, irregular masses of bone connecting the pelvis with the trochanteric regions of the femur.

The anatomic department of the museum contains a wonderful collection of dissections and frozen sections that are of such great value in the teaching of anatomy by demonstrations. The professor of anatomy is an original and enthusiastic worker. His whole time is spent in teaching and advancing both the science and art of anatomy. It is much to be deplored that in our own country this part of teaching suffers greatly, by the teachers of anatomy being active practitioners who have to depend for their living largely upon their income outside of their college work.

By far the most prominent surgeon in Ireland today, is Sir William Stokes, a son of the distinguished Irish physician, Dr. Stokes. He is professor of surgery in the College of Surgeons, and attending surgeon

to the Meath Hospital where he operates, and delivers his clinical lectures. He has inherited the inimitable qualities which characterized his father, and has done much toward the advancement of modern surgery in Ireland. He is a fluent and forcible speaker and an excellent operator, is honored and respected by his patients and is a great favorite with his students. He bears his title with modesty and dignity. He will read a paper on "Fractures of the Neck of the Femur" at the forthcoming meeting of the British Medical Association. He has collected numerous specimens which he has studied with great care and which he will use as a groundwork upon which to base a new classification of fractures of the neck of the femur. The views which he will advance and elaborate will do much to illuminate a dark corner in surgery.

Professor Bennett is making elaborate preparations to open the discussion upon this paper, and we may expect a flood of new light upon this subject from these two Irish surgeons. During my visit to the Meath Hospital, Sir William made an amputation of the thigh through the middle third by Teale's method, for sarcoma of the leg. He is painstaking in his work and it is evident that he has the interests of his patient more at heart than a desire to impress his audience with the brilliancy of his work. A visit through his wards satisfied me that the Irish surgeons are wide awake in the development of surgical pathology, and in the adoption of new surgical resources. The museum of the College of Surgeons contains a vast amount of material available for the study of surgical pathology. It seems to me that this almost inexhaustible mine should be more frequently explored in the preparation of scientific papers which require illustrations of morbid anatomy to explain the text.

The training schools for nurses in connection with all the hospitals in this city are in a flourishing condition. The Rotunda Hospital is an object of great interest to every visiting physician. If the old building could speak, it could tell of many sad events, it could narrate many disappointments in love and could tell of many reverses in life. It is here that many young physicians have laid the foundation for their future success as family physicians, by receiving a thorough practical training in obstetrics. Recently, ten children came into the world in this institution in one day, and the number of births during the last year, I was informed, numbered over 2,000. That prudent conservatism is practiced in this institution is evident from the fact that, on an average, only one Cæsarean section and one symphyiotomy are made during a year. Antiseptic and aseptic precautions which are conscientiously carried out have succeeded in almost completely stamping out puerperal infection. The lady Superior is a remarkably bright and intelligent woman, who takes interest in her work and who, at the same time, takes a great delight in the success of the Master of the institution. Professor Smyley, the Master of the Rotunda, met with an accident a few days before I visited the hospital. Like many physicians in this country he rides a wheel, and during one of his excursions he fell and fractured his arm. For a speedy and satisfactory repair of this injury he has sought a quiet country resort from which, let us hope, he will return with new vigor to pursue his good work.

Professor Myles is professor of operative surgery

in the College of Surgeons and does excellent clinical work at the Richmond Hospital. He is one of the rising young surgeons in this city. Among the older Irish surgeons who have made Dublin famous as a medical center, must be mentioned Crampton, R. W. Smith, Abraham Colles, Robert Adams, Butcher and John Cusick, all of whom made valuable contributions to surgical literature, beside being influential and eminent teachers.

#### BELFAST.

In the north of Ireland is the stirring city of Belfast. It is a Chicago on a small scale. The enterprise of its business men has done much toward absorbing many of the commercial interests which naturally belong to the two other large Irish cities—Dublin and Cork. The city bears an aspect of great activity and prosperity. The medical school is a part of the University, and is built upon the same grounds. It is a spacious and commodious building, but the laboratory facilities are as yet quite limited. As is the case with all medical schools that have existed a hundred years or more, the most interesting and attractive part is the museum, which has been made the depository of many rare and unique specimens. Professor Sinclair, the occupant of the chair of surgery in this school, showed me the collection and pointed out many specimens which are of interest to the writer. The museum contains hundreds of specimens illustrating the different kinds of fractures and the process of repair. He informed me that the Irish surgeons understand, by a Colles' fracture, a fracture through the radius near the wrist joint *without* impaction, as Colles described a fracture in this locality which could be readily reduced, with a tendency to re-displacement. English and American surgeons describe under this term, impacted, as well as non-impacted fractures, which is evidently a mistake according to the teachings of Colles, whose views on this subject have been retained by the Irish surgeons. I examined a number of specimens of intra-capsular fractures of the neck of the femur with bony union, in this collection, none of which have evidently ever been described in print.

About a dozen female medical students aspire here for the degree of Doctor of Medicine, preparatory to placing themselves on a level at the bedside with the male members of the medical profession. The "new woman" can be found here as elsewhere, in competition with the sterner sex in the various walks of life.

Professor Sinclair is a young surgeon of considerable promise, who avails himself of all the recent advances and improvements in surgery. His clinical work is done at the General Hospital, an old building with a capacity of about one hundred and forty beds. The operating amphitheater is small and inadequately supplied with modern facilities.

The Irish surgeon has to contend everywhere with the disadvantages incident to old buildings and poorly equipped operating rooms, and yet the results obtained compare favorably with those obtained in institutions supplied with all modern facilities; the best possible proof that they are doing good honest work.

In the General Hospital accidental surgery predominates, which gives the students an excellent opportunity to become conversant with emergency work. Dr. Byers, the professor of gynecology, has fitted up

a model little operating room for abdominal surgery, which is supplied with all the necessary conveniences to perform aseptic operations. All of the patients recently subjected to abdominal operations for various indications were doing well.

The classes in the Dublin and Belfast Medical Schools number on an average about two hundred and fifty.

Fearing that the length of my communication will tax the patience of the readers of the JOURNAL, I will close with the statement that Irish surgery, as practiced at the present time, under the leadership of such men as I have mentioned, is a credit to the profession and the country it represents.

Belfast, Ireland, July 18, 1895.

## SOCIETY PROCEEDINGS.

### American Electro-Therapeutic Association.

*Fourth Annual Meeting held in New York Academy of Medicine, New York, Sept. 25, 26 and 27, 1894.*

WILLIAM J. HERDMAN, M.D., President.

(Continued from page 246.)

DR. EDWIN J. HOUSTON read a paper prepared by himself and DR. KENNELLY on some experiments on

#### DEATH BY THE ALTERNATING CURRENT.

Having observed a communication in the *Comptes Rendus* of the Academie de Sciences, from M. D'Arsonval in June, 1894, respecting a case of apparent death produced by accidental contact with an alternating current circuit, and the means successfully adopted for reviving the person shocked, we desire to enter our earnest protest against what we regard to be the unwarranted conclusion that Dr. D'Arsonval has apparently drawn from this case, taken in connection with his previous experiments with animals. While we do not for a moment doubt the correctness of the general observations in this case, nor that similar cases may frequently arise in practice, and while we are desirous of fully accrediting to Dr. D'Arsonval the great value of the suggestions made by him, namely, that a person shocked by electricity should be treated as a person drowned, a treatment which we would indorse as being proper to employ in all cases where even the shadow of a doubt exists as to the actuality of death from electricity; yet we desire most emphatically to call in question the correctness of the general conclusion reached by Dr. D'Arsonval, that because in this particular case resuscitation was possible, that all cases in which no marked lesions or evident destruction of the tissues are effected, death is only apparent and resuscitation possible.

In the communication referred to, Dr. D'Arsonval arranges all cases of the passage of powerful alternating currents through the human body into two classes, viz.:

1. Where lesion or destruction of the tissues is produced. (Disruptive and electrolytic effects of discharge.)

2. Where the excitation of nerve centers takes place, producing arrested respiration and syncope but without material lesion.

In the first case Dr. D'Arsonval claims that death is absolute; in the second, on the contrary, it is only apparent. As far as we can learn this classification, so far as human beings are concerned, is based on the actual observation of but a single case. This case he appears to believe sufficiently convincing to warrant the conclusion that all cases in which alternating currents pass through the human body without producing evident lesions are capable of resuscitation.

Further, Dr. D'Arsonval appears to believe that the evidence in this case is sufficiently convincing to warrant the monstrous statement made in his communication that even in the electrocutions in the State of New York, death is not produced by the current, thus leaving the public to infer that it has been produced by the knife of the surgeon, in the autopsy which always follows.

In view of the importance of the subject, we append a translation of the facts described in Dr. D'Arsonval's communication as being those upon which he apparently bases his opinion:

"The following is a statement of facts communicated by MM. Picou and Maurice Leblanc, two well-known electricians who were eye witnesses of the accident and who res-

cued the man to whom the accident occurred. When the accident happened at Saint Denis, the electrometer at D'Epinay connected between two of our three wires showed 4,500 volts, and an ammeter introduced in one of them showed 0.7 ampere.

"At the spot where the accident occurred the three wires were carried by insulators supported by a bracket on the wall about 6 meters above the floor. The man who was shocked was seated astride the lowest bracket holding one of the conductors in one hand. He had with him a telephone wire which he was about to place in position. This wire rested on the bracket on which the man was seated and came in contact with another of the three wires. The circuit was closed through the man, entering by one hand and leaving by one buttock in direct circuit. He was, therefore, subjected to the full pressure of 4,500 volts at a frequency of about 55 periods. It is difficult to say precisely how long this circuit was maintained but certainly for several minutes. The short circuit established set up sparks at the commutator of the D'Epinay apparatus. The operator who attended it believed that an accident had happened on the line and telephoned to La Chapelle to stop. All this represents a sufficiently long time. We were leaving D'Epinay at the moment and we were already on the train when informed of the accident which had just happened. About a quarter of an hour afterward we arrived at Saint Denis. The man was still sitting on the bracket and gave no sign of life. There was considerable difficulty in bringing him down and this operation took at least half an hour.

"Following your advice, we practiced artificial respiration by manipulation of the arms and, at first, without result. I then forcibly opened his mouth and pulled forward his tongue. His lungs then operated almost immediately. In two hours he could speak. He was burned on the right hand and on the buttock. He is now well.

"Several days ago they wrote to me again; the injured man is progressing favorably. It is to be observed that no particular trouble due to the passage of the current through his body has been manifested. No attention has been necessary, except to his burns."

In the first place we desire to point out that the pressure alone of 4,500 volts mentioned is without significance, unless it is taken in connection with the current actually passing through the subject under such pressure. We would also point out the fact that a marked difference exists between cases of the application of the alternating current, as employed in electrocution in the State of New York, where the current is deliberately conducted through the body for the purpose of killing, and such cases of accidental contact as that referred to by D'Arsonval. Here, assuming the correctness of the ammeter reading quoted, namely, that a current of only 0.75 ampères was passing, the resistance of the body could not have been less than 6,000 ohms. The resistance of the body between the electrodes used in the electrocutions of New York, *i. e.*, one on the head and the other on the right calf, is sometimes as low as 200 ohms, and usually not more than 300 ohms, the current strength employed being from 5 to 8 ampères, say seven to ten times stronger than that which is stated to have passed in the case mentioned.

In view of these facts we submit, that, in our opinion, Dr. D'Arsonval is entirely unwarranted in drawing the general conclusion already alluded to. Unwilling, however, to base our opinions on mere surmises, we arranged for a series of experiments on dogs in our laboratory, under conditions in which actual facts only were admitted. Being unwilling to leave to our own judgments the question of the actuality of death, we were fortunate in securing the cooperation of the following eminent members of the medical profession in Philadelphia, namely:

Dr. Judson Daland, Instructor in Clinical Medicine, University of Pennsylvania; Dr. G. G. Faught, general practitioner; Prof. L. Webster Fox, Professor of Ophthalmology, Medico-Chirurgical College; Dr. E. Laplace, Professor of Surgery, Medico-Chirurgical College; Dr. William L. Zuill, formerly Professor Veterinary Medicine, University of Pennsylvania.

One of the observers kept the time of all observations; a second recorded all the observations with the time of their occurrence; a third observed the reading of the Weston alternating current voltmeter placed across the supply mains; a fourth observed the reading of the alternating current ammeter placed in circuit with the dog. The alternating current employed was from the street mains making about 130 cycles per second, and at a pressure of about 1,250 volts, reduced in some cases through a 1.5 K.W. transformer to about 700 volts. Four good-sized dogs whose