a number of months been insignificant. Thus, in the week ending January 30th there were but two deaths from influenza, seven from scarlet fever, four from measles, and one from typhoid fever.

Miscellany.

DANIEL MARCH, JR., M.D.

RESOLUTIONS OF THE EAST MIDDLESEX DISTRICT MEDICAL SOCIETY.

WAKEFIELD, January 20, 1897.

Whereas, In the all-wise providence of the great Ruler of the universe, our most highly esteemed associate, Dr. Daniel March, Jr., has been suddenly stricken down and taken from our midst, it is hereby

Resolved, That the members of the East Middlesex District Medical Society deeply and sincerely mourn the loss of its officer and member. As its President, he was able and efficient in his office; as a member, he was ever a willing coadjutor, wise counsellor and loyal friend. As a physician, he was worthy and well-qualified, just and upright in the highest degree in his relations with his fellow-practitioners, unselfish, courteous and kind. He was deeply beloved by his constituency for his skill in his profession, his generosity, his sympathy and helpful spirit. As a citizen and a man among men, he was valued for his true friendship, his unswerving integrity and his sacred honor. The members of this Society will ever cherish the memory of our deceased brother, and hold in emulation his character and record.

Resolved, That a copy of these resolutions be sent to the family of our deceased President, extending to them the heartfelt sympathy of our Society, and also that the same be spread upon the records of the Secretary.

FRANK W. GRAVES, M.D.,
SETH W. KELLY, M.D.,
CHAS. C. ODLIN, M.D., } Committee.

EDWARD P. ELLIOT, M.D.

BOSTON, January 21, 1897.

In the death of Dr. Edward P. Elliot, Assistant Superintendent of the Danvers Lunatic Hospital, the Medico-Psychological Society has sustained a loss which its members can but view as personal.

His unassuming, modest bearing, genial companionship, and cultured intellect commanded the regard of all who came in contact with him.

His methodical application to his duty, his faithful devotion to his obligations, and his loyalty to superior officers were traits which characterize a true knight, whose death always leaves a permanent void in the ranks.

His rare mental gifts, quick perception, retentive memory, logical powers, and scientific inclinations admirably fitted him for the good work he has done, and gave rich promise of ultimate eminence in his profession.

But alas! these divine faculties, deprived of full exercise by physical infirmities extending over a period of several years, are now extinguished to us by the untimely claims of Death. Therefore:

Resolved, That this, our estimate of his ability and worth, be entered upon the records of this Society, as an expression of our feelings of deep personal affliction.

Resolved, That the Secretary be requested to make a copy of this record, and transmit the same to Dr. Elliot's bereaved father, with the assurance that we sorrow for him in his loss, and sympathize with him in his loneliness.

CHARLES W. PAGE,
PHILIP COOMBS KNAPP, } Committee.
ROBERT T. EDES,

Correspondence.

LETTER FROM ROME. PUBLIC HEALTH IN ROME.

ROME, January, 1897.

MR. EDITOR:—During a short stay in Rome, I have been enabled, through the kindness of Dr. Tito Gualdi, Sanitary Director, to examine some of its hygienic arrangements, and have found them most admirable. The same laws as to public health are found throughout the whole of Italy, but the perfection of detail depends upon the individual city.

Each city has an elected town council as its legislative body. This council elects in turn a *junta*, consisting of a syndic or mayor, and a number of *assessori*. The mayor is the president of the *junta*, and the *assessori* are practically deputy mayors, each *assessore* having in charge some particular department, such as finance, or public health. The *junta* is the executive body of the city. The *assessore* of public health has, however, no power over the practical details of the health department. These are in the hands of the sanitary director, who is elected by the town council and must be approved by the central government. The sanitary director not only attends to contagious diseases, but has also the care of the treatment of the poor. For this purpose, in Rome, are appointed (by competitive examination) eighteen district physicians and seventeen *nocturni* or physicians for night calls. There are, also, six *neuroscopi* through whose hands all death certificates must pass. There are located in this city, and under the sanitary director, five maternity hospitals. If a poor woman be about to become a mother, she is taken to one of these hospitals, delivered, and returned to her home, in uncomplicated cases, in twelve days. It is rather uncommon, at present, for any poor woman to be confined in her own home.

In the case of contagious diseases, the laws are very strict and very rigidly observed. Each practising physician of the city is given a book containing a large number of coupons, with spaces for the name of the patient, residence, etc. When he meets a case of contagious disease, he must detach two of these coupons, and personally present them without envelope, one to the syndic and one to the sanitary director. They, separately, must report the case to the central government. The idea is, that the suppression of cases, through favoritism or other causes could hardly occur, since each official acts as a check on the other. The physician does not enter the disease on his coupon (as the coupon is open to view), but simply numbers it, leaving on the back cover of his book a number corresponding to each of the prescribed diseases. This method is in vogue all over Italy, and is called "denouncing" the patient.

Cholera is the most dreaded of all diseases, but is now practically extinct in Rome, owing to an excellent water system, great care in bacteriological examination, and excessive precautions on the part of the health authorities in all suspected cases. There are two laboratories under the sanitary director, one for bacteriological examinations of all kinds, and the other for chemical analyses. The chiefs of these laboratories must be men well known in their special line of work, and they must be confirmed in their appointment by the State. Variola is of rare occurrence, owing to a very general vaccination. The law requires that each child shall be vaccinated before it is one year old, and revaccinated in its eighth year. There are two penalties for violation of this mandate. The first is that the unvaccinated child cannot enter any school, either public or private. In Boston, a child cannot enter any public school without having been previously vaccinated, but may be sent with impunity to any one of our numerous private ones. Thus, their law is stricter than ours in that particular. They have, besides, a second penalty, which is, that unless a child be vaccinated at the times prescribed,

he cannot, in after years, be eligible for any public office. This, to an Italian, is practically a loss of citizenship.

Tuberculosis is placed among the diseases to be denounced. When a notification of a case of tuberculosis is received, the house is visited by a medical sanitary inspector. He gives complete instructions to the attendants or family. The attending physician is obliged to see that all handkerchiefs, nightdresses, bed linen, etc., are thrown into a receptacle containing proper disinfectants. At regular intervals the disinfectors from the lazaretto call and remove all soiled articles, thoroughly sterilize them, then wash them and return them to the owners. This is done at the municipal expense in the case of poor people. Others pay according to their means. It is forbidden to wash any article belonging to a tuberculous patient outside the lazaretto. After a death from tuberculosis, the rooms and furniture are disinfected in a manner to be hereinafter described. A complete record of all houses in which tuberculosis has occurred, is kept at the central health office, so that any one about to hire or buy a house, may there learn its full history.

In some of our American cities, notably New York, similar precautions are taken. In Boston, however, where tuberculosis kills more people than all the other germ diseases combined, we do nothing. If we have an excessive mortality, we complacently attribute it to the prevalent east wind, and so plod along in our mediæval way. O modern Rome! O ancient Boston!

All cases of contagious diseases are supposed, of necessity, to go to the lazaretto. Special permission to remain at home may, however, be granted at the discretion of the sanitary inspector. In such cases the family physician is directly responsible to the health authorities for the carrying out of all proper precautions and must conduct the case under their supervision.

There are two corps of disinfectors. One stationed at what, for convenience, I shall call the central building; the other at the lazaretto. Those at the lazaretto, however, are in a separate building at one of the gates of the courtyard, and are exposed in no way to the dangers of the contagious hospital proper. The men at the central building have apartments corresponding somewhat to the ground-floor of one of our fire-engine houses. These consist of three large, well-lighted rooms with concrete flooring. One of these rooms is the office, in which all records are kept. Then comes the main room which contains a number of small carts, some of them small enough to be dragged by a single man, and others built for two men. Next in order is a room containing boxes and wardrobes for clothing, sterilized sheeting, etc., and a shower bath.

When the men arrive in the morning, they strip off their clothing, and don a fatigue uniform of blue cloth, only to be worn while at work. Then, they get their respective carts ready for the day's work. The carts contain a large tub which holds a measured quantity of water, concentrated solutions of corrosive and other disinfectants in bottles, a glass graduate, a large number of brushes of different sizes, a strong metal scraper for walls and floors, a heavy broom, which comes apart for convenience in packing, a thick swab of short broom canes, shaped like an inverted cone, for swabbing water-closet bowls, a sterilized linen suit and sterilized shoes. Attached to the outside of the cart are the brush poles which are too long to be conveniently packed away. The suit consists of long, loose linen stockings which draw over the foot and are tied to the upper part of the thigh, a long blouse or coat which comes nearly to the knees and which is tied in at the wrists and neck, besides being lapped over, and closely fastened all the way down the front, a linen hood falling over shoulders and having a face strap across the mouth and moustache, and a pair of large shoes. The shoes deserve a passing notice. It is considered here that shoes of all kinds are the greatest carriers of infection. It is enjoined then, that the men, when about to enter an infected house, shall remove their shoes at the entrance, put on the sterilized over-suit and then the shoes provided by the department. These are a large, clumsily-made shoe with thick wooden soles and heels

and a strong cloth top. It is found that these can be sterilized as easily and as thoroughly as the suit. Each man is obliged to return to the central office after every disinfection, and before starting again must provide himself with freshly sterilized suit, hood and shoes. No over-suit is used twice without resterilization.

When a disinfection is to be done, the lazaretto men are notified by telephone, so that they may be at the appointed house at the same time as the others. Then, before starting, a record is taken at the central office of the place to be visited, the hour of starting, and the men detailed; on the return of the men, a further record is made on the same blank of the hour of return, the apartments disinfected, the articles removed for disinfection, the amount of disinfectants used, the kind of disinfectants and any other details which may be necessary. This blank is afterwards verified by the visit of an inspector, who travels from place to place on a bicycle. After his verification has been obtained, the record blank is filed in the department. When the work of the day is concluded, the men wash face and hands in a corrosive solution, strip to the skin, put away their fatigue uniforms, step under a shower bath, don their street costumes and go home.

The method of disinfecting a room is worthy of consideration. The central and the lazaretto men meet at any house designated. The central men, having put on their sterilized suits, proceed to the infected apartment. If the floor be carpeted, they first spray with corrosive solution, 1 to 500, combined with chloride of sodium, so that no dust may arise. Then the carpet is removed, the floor being continually wet under it during the process of removal. If a bare floor exist, it is immediately drenched with a plentiful supply of 1 to 3,000 corrosive, combined with hydrochloric acid. All carpets, bedding, mattresses, portières, curtains, clothing or anything of like nature are rolled up in sterilized sheeting and given to the lazaretto men, to be removed by them and treated at their own building. The central men then thoroughly drench the walls with corrosive (1 to 500) and chloride of sodium. This drenching is done with a small hand-pump which should have been enumerated with the contents of the cart. After the drenching, a vigorous scrubbing takes place, and, if need be, a vigorous scraping also. Each chair is taken to the tub and thoroughly scrubbed with the solution. Stuffed furniture is treated with the corrosive and sodium chloride solution, which they consider harmless. Metal articles, such as brass beds, are rubbed over with a phenic-acid solution. Water-closet bowls are swabbed out with slaked lime. Landlords are then obliged to paint, paper and whitewash the rooms at their own expense.

The thought occurred to me, that perhaps our people might object at first to such thorough measures, and I, therefore, asked Dr. Gualdi whether he ever met with opposition. "Oh, yes," said he, "we used to meet with clubs in the beginning, but we persevered, and now the people send for us and are willing to pay. This is notably the case in tuberculosis, where we often disinfect a number of times during an illness."

When the men employed at the lazaretto disinfecting plant arrive in the morning, they enter an outer room, strip to the skin, pass through a second room into a third, where they put on a blue blouse and pantaloons which are worn all day. They receive a freshly-sterilized suit every morning. When they are ready to leave at night, they strip in the inside room, wash face and hands in a corrosive solution (1 to 1,000), then pass into the middle room, where they take a shower bath of fresh warm water, resume their street dress in the outer room and go home.

The lazaretto disinfecting plant contains two steam boilers, a receptacle for phenic-acid solutions, a stone vat for corrosive solutions, arranged so that the articles may be thrown into it in the infected apartment and removed on the other side of the partition, a small, tight apartment for sulphur fumigations, various vessels for cleansing purposes and a complete washing and ironing department.

They place great reliance on their steam sterilizers and work them scientifically. According to Geneste, twenty-

five minutes at 100° to 120° C. were only required in these boilers to destroy all germs. After a number of experiments, however, they have come to the conclusion, in Rome, that sixty minutes should be given to each sterilization. Attached to each boiler is an instrument which records on a chart the number of minutes consumed during each sterilization and the pressure during that time. There are, also, two instruments, either one of which is used for determining the degrees of heat. One is a thermometer which is placed in the very centre of the articles to be disinfected. This is so arranged that when the column of mercury pushes up to 120° C., a metallic circuit is completed and a bell is rung. The other is an ordinary spring clothes-pin, jaws pressed apart and held so by a clamp composed of an alloy which fuses at any point from 90° to 120° C., according to its composition. When the desired heat is reached, the clamp dissolves and releases the pin, which springs back into position and rings a bell. As soon as the bell announces that the maximum heat desired has reached the centre of the mass of bedding, or whatever may be in the boiler, the recording apparatus is attached and the chart must then record a duration of sixty minutes at a uniform pressure of eight atmospheres. Whenever handkerchiefs, bed linen, nightdresses or any articles for personal use are spotted with fecal matter, sputum, blood or pus, they are not only treated with steam, but the spots are carefully scrubbed in various disinfecting solutions. Permanganate of potassium is frequently used for this purpose. Many of such articles are thrown into the corrosive vat (1 to 500) and there kept for six hours. They are then put into vessels constantly filled with fresh, running water. They are afterwards bleached in vessels containing soda lye, heated to 100° C., and finally washed in large iron tubs, attached to a steam belt, and so arranged that they have a churning and an oscillating movement at the same time. Shoes are dipped into a phenic-acid solution, and great care is taken that the soles are thoroughly treated. Sulphur fumigations are reserved for valuable furs, and such things as cannot be treated in any other way.

The lazaretto proper is under the care of the Sisters of Charity. No hired attendants are allowed within its walls. The nuns, themselves, do everything from the lowest kinds of menial work to the highest form of nursing. Those nuns who have patients under their care are necessarily quarantined until their wards are empty. The physicians also live in the hospital and remain isolated during their term of duty.

As with us, they treat, principally, diphtheria and scarlatina. Measles and typhoid are, however, frequently under treatment. For both of these diseases, the disinfecting regulations are enforced. Glanders is sometimes met, and for this there is a special disinfection of apartment, consisting of a drenching with phenic acid and a rubbing down of the walls with quicklime. In the treatment of diphtheria, antitoxin is always used. They have it in three strengths, and commence their treatment with the weakest serum, repeating every three hours and gradually increase the strength until they get an effect. As soon as the patient enters the hospital, a culture is taken. If the case be a favorable one, another examination is made a few days after. If, after the clinical symptoms have disappeared, a negative culture be obtained, the patient is kept for about eight days. If another negative culture be obtained at the end of that time, a transferral to the convalescent ward takes place. A discharge from this latter place is expected in ten days more, provided there be no relapse. Scarlatina takes a malignant form and is much dreaded. Special precautions are taken in its treatment and the general tendency is toward recovery, unless there be an ensuing nephritis. In order to guard against all danger, patients are kept for forty days after desquamation has ceased.

Unfortunately, my time was so limited that I was unable to enter into any investigations as to plumbing regulations. These to me, however, form a most important part of public health work in our large American cities. Mayor Quincy partially recognized this fact last year, when he

appointed a sanitary commission to examine into the condition of our public schools. And no one, who read the very excellent report of this commission, could doubt the wisdom of its appointment, or the practical science of its members. I find, by a recent number of the *New York Herald*, that that paper is following along the same line in its own city. An editorial (December 26, 1896) says:

"The inquiry which the *Herald* has been making through the aid of plumbers, physicians and sanitarians begins to reveal the immense importance and practicability of making a new departure in city hygiene."

Our people do not sufficiently realize the great change which has taken place in the conditions of life in our cities, during the last twenty years. The character of our immigrants has completely changed. A few years ago our incoming population consisted of English-speaking people, with an admixture of Germans and some French. As soon as they reached this country, they either entered domestic service, or joined foreign-born friends, who had already acquired the rights of citizenship. They thus became rapidly fused into the homogeneous mass. Now, however, we have in every city its distinct "quarters." Chinese, Armenians, Italians, Portuguese and Poles herded by themselves, and limit themselves to an area of a few squares. This herding means a great increase in tenement-house living. A few years ago, also, there was great demand for small houses in the suburbs; to-day, even in those very suburbs, apartment-houses are springing up in every direction. Practically, another form of tenement-house living. Again, an excess of population in certain districts necessarily causes an overcrowding of the public schools. This overcrowding causes two evils: First, an assigning to the rooms in the schools already existing, more scholars than they can properly accommodate, and, secondly, the hiring of outside rooms which are totally unfitted for the purpose.

All these things (and many more, had I the space to detail them) prove the necessity of the supervision of a practical sanitary engineer. A thoroughly-grounded sanitarian is as necessary to-day on the boards of health of our large cities as a physician. And it is not sufficient that such a man should be a subordinate. No professional man, hampered by superiors, who have not his special knowledge, can do himself full credit. He should have, to be effective, an equal voice in all deliberations of the board, and an equal vote in all its decisions and regulations.

As far as the efficacy of the sanitary regulations enforced in Rome is concerned, some progress has already been noted. Scarlatina has diminished in its number of cases, and its mortality. As in all other cities, since the advent of bacteriological examinations, the number of cases of diphtheria reported is as great, but the mortality is much decreased. Cholera and variola, as I have before stated, no longer exist. Tuberculosis, though never the dread enemy that it is with us, has been sensibly and favorably affected.

Why not, then, try in our own city some of the measures that have been successful in other places? Two objections might be encountered: the lack of money and the opposition of the people. As for the first, there is no way in which money can be so well used by a municipality as in securing the health of its citizens. The principal opposition would be on the part of tenement-house landlords. They would soon discover, however, that the money needed for repairs after a disinfection, would be but trifling when compared with the loss caused by an unrented apartment. As for the disinfection and washing of the clothes of tuberculous patients, I believe that a department for such a purpose would pay for itself, and would be eagerly sought by those having such patients under their charge.

Very truly yours, WM. G. MACDONALD, M.D.,
Formerly City Physician of Boston.

RÖNTGEN-RAY EXPERIMENTS.—The Prussian Government is reported to have appropriated \$12,000 for Röntgen-ray experiments during the current year.