

order to drive her through the masses of hyacinths, and is so modeled as to offer as little resistance to the obstruction as possible. Her reservoirs carry a sufficient supply of chemical to cover about 100,000 square yards, and on a portion of the stream where the growth is not too rank, the steamer will treat this area of surface in a day. In places where the side sprayers cannot be utilized on account of trees or other obstruction, the chemical is applied to the plants by means of ordinary hose operated by members of the crew.

Such is the destructiveness of the solution that within a few hours after it is applied the withering process begins and microscopic tests prove that the liquid penetrates the growth below the water, killing the roots, as already stated. Portions of the dead growth which have been pulled from the bottom of the St. Johns where the treatment has been applied show that the effect of the chemical is to rot the fiber and disintegrate it to such an extent that it no longer offers resistance to navigation. The solution kills the seed as well as the plant, and efforts are made to cover as much space during the seeding period as possible. The work has been done under the direction of the United States engineers. A. W. W.

MARCONI IN ROME.

Perhaps in no other country in the world is the work of the investigator in fields of scientific inquiry so little appreciated at its true worth as in the United States. To be sure, the newspapers see to it that no discovery, which can be readily colored with mendacious splendor to attract the public eye, is allowed to go unacclaimed as the most revolutionary that has been made in a century. But sensational recognition is hardly the desire of any true scientist.

If Americans seem cold, other nations on the contrary seem more than warm in their praise of scientific work. The opposite extreme of extravagant admiration in the form of popular demonstrations seems often to be reached in the southern countries of Europe. Not the least striking example of the heights to which the enthusiasm of a warm-hearted race may soar in its appreciation of the brilliant scientific achievements of one of its members, is afforded by the greeting accorded to Marconi on the occasion of his recent visit to Rome. We are as fully convinced of the greatness of our nation as Italians are of the glory of theirs. Yet, what American scientist or inventor was ever welcomed at a railway station by a deputation of city authorities and by a multitude of cheering countrymen? Still, such was the reception of Marconi in Rome on May 1 of this year. Not only the students of the colleges shouted an Italian welcome to him; but little school children seemed carried away by the popular fervor, and added their voices to the outburst of their elders. Not even a heavy downpour of rain could check the Italian ardor. The horses were unharnessed from Marconi's carriage, and men fought with one another for the honor of dragging him to his hotel. If the Italian papers are to be credited, his journey through Italy must have been a veritable triumphant procession. Indeed, the glamor of his presence in Rome waned only on the arrival of Emperor William, but soon regained its brightness after the departure of the Kaiser. At a special session of the City Council of Rome and in the presence of his family, Marconi was made an honorary citizen. In the great hall of the Campidoglio, reserved for kings and the highest dignitaries, and in the presence of the King and Queen and of a gathering composed of the foremost scientists and of Rome's aristocracy, he read a paper, seven thousand words in length according to his own statement, on his work in wireless telegraphy. The next day the Mayor drove him to the wireless telegraphic station on Monte Mario, where telegrams of congratulation were exchanged with other Italian wireless stations. Then followed a series of banquets at which orations were delivered, the chief topic being, of course, Marconi, who, it was plainly stated, was not only the most famous scientist of Italy, but even of the world. In a pretty speech, Marchesa Capranica del Grillo made him a member of the Italian Naval Institute in the house of Adelaide Ristori.

Much of this theatrical adulation, which to an American or Englishman is repulsive, can, of course, be explained by the effusive, emotional warmth which has ever characterized the Italian temperament. The feats of an Italian, be he scientist, soldier, poet, or painter, are generally viewed through a telescope and magnified out of all proportion. We are not prone to belittle what we have done in vanquishing other nations in the ceaseless war waged by commerce; we have not utterly disregarded the commanding place which we have lately assumed as a political power, and we certainly have not failed to impress upon our children something of the glory of American history. Yet, it seems quite beyond the power of the average American not only to award to his scientific countrymen that need of recognition which is properly theirs, but even to remember their very names. How many Americans have ever heard of Langley and Remsen among living

scientists, not to mention Henry and Marsh among those of the past?

It is hardly necessary to drag a scientist in his carriage to his hotel as if he were a prima donna; to wait upon him whenever he visits a prominent city, or to surfeit him with applause. Some encouragement, however, he surely deserves, and that encouragement should be given with becoming dignity and with somewhat more generosity than the richest country in the world, a country, moreover, which owes much of its wealth to the work of applied science, has been wont to bestow on its investigators.

AN ELECTRIC TRAMWAY OPERATED UPON THE LORAIN CONTACT BOX SYSTEM.

Some time ago a short section of street surface railroad operated upon the Lorain principle was laid down in this country for experimental purposes. The feature of this system is that instead of the current being supplied by means of a trolley and overhead wires, or the conduit, contact boxes are installed along the track at intervals of a car's length, so that the car always engages at least one of the contacts and receives the necessary current therefrom. The system was submitted to a nine months' test, but was never adopted by any company or municipal authorities, with the result that it fell into practical oblivion. Now, however, the town of Wolverhampton, England, is having its tramways operated upon the Lorain principle. When the town decided to convert its horse traction street railroads to electricity the overhead trolley system was adopted. One of the members of the civic authority, however, brought the Lorain system before the council, and although it was explained that this system would cost about \$10,000 a year more to maintain than either the conduit or the overhead trolley service, it was decided to adopt it upon the condition that the Lorain company should lay down and maintain the test lines for twelve months, so that the authorities might study its operation and possibilities. If at the end of that period it had proved a commercially successful operation the council would then decide whether to adopt it or otherwise. In fairness, however, it was decided that the term "commercial success" should be taken in comparison with the overhead trolley system working under similar conditions, and the question of whether it was operated at an actual profit or loss during the year, was to be left out of consideration, since this is influenced to a very great extent by the receipts per car mile.

For the purposes of the test a section of about 11½ miles was converted at an approximate cost of \$9,000 per mile, exclusive of the expenditure upon the track, which cost about \$27,500 per mile, or a total of \$36,500 per mile of track. This is more than what it would have cost to install the overhead trolley system, but less than the expense entailed in laying conduits.

The Lorain company have completed the conversion and the street railroad is now on trial. At first the plea that the contact boxes between the tracks would be a source of danger to pedestrians and horses was raised. Cases of persons who had experienced shocks by treading on the boxes while crossing the thoroughfare were at first reported, but when the matter was investigated these were found attributable to unskillful laying of the contact boxes. Col. Yorke and Mr. A. P. Trotter, upon their inspection of the first section of the line on behalf of the Board of Trade, drew attention to the projecting of the contact boxes above the level of the roadway and they condemned them in unmeasured terms as being at least undesirable. Mr. Trotter supplemented his report by raising the question of danger due to the mechanism in a contact box failing to act, that should the piece of iron which makes the electrical contact not fall after the skate has passed along, a man or a horse treading upon the block would in all probability be killed. However, no accidents arising from this source have as yet occurred and any defects which have presented themselves from time to time have been immediately remedied.

In the event of the system not commending itself to the council authorities of Wolverhampton at the expiry of the experimental term, the Lorain company will have to remove their contact boxes, and transform the cars so that they can be adapted for the overhead system, at their own expense. The cables have already been laid in case of such an eventuality, and thus the railroad could be brought into operation on the overhead trolley principle with but very little delay. At the present moment Wolverhampton is the only place in the world where the Lorain contact plate system is in use. Should the trial prove satisfactory and a financial success, it will be extended for another 11½ miles. Furthermore, once it has established its success in this case it will in all probability be adopted by other cities in the United Kingdom, as the trials are being followed very closely by the leading municipal engineers. Up to the present the system has proved highly successful, but no reliable data as to its operation, cost of maintenance, and working will be forthcoming until the termination of the experimental year.

THE UNION ENGINEERING BUILDING.

A formal organization of the joint committee representing the various bodies which have taken action with respect to the gift of one million dollars of Mr. Andrew Carnegie for a union building, was effected on the evening of June 18. The American Society of Mechanical Engineers, the American Institute of Electrical Engineers, and the Engineers' Club have taken final action and appointed their representatives upon a joint committee for accepting this gift. The American Institute of Mining Engineers has likewise taken action in so far as its rules permit. Its council has appointed representatives subject to changes in the rules of the organization, which have been proposed by the council for adoption at the next general meeting. At the present time a letter ballot for ascertaining the attitude of the members is being taken, which shows an overwhelming majority in favor of the plans proposed by the council.

The American Society of Civil Engineers at its recent meeting in Asheville referred the matter to its board of directors for recommendation, and directed that the matter be then presented to the members of the society for letter ballot.

The joint committee was organized by the election of the following officers: Chairman, Charles F. Scott, secretary, Prof. F. R. Hutton. The chairman was directed to indicate to Mr. Carnegie the acceptance of his gift by the joint committee representing the several organizations.

The joint committee placed the immediate work of developing plans upon an executive committee of five, consisting of one member from each of the five organizations named in Mr. Carnegie's letter.

THE CURRENT SUPPLEMENT.

The current SUPPLEMENT, No. 1435, opens with an excellent description by Day Allen Willey of the biological laboratory at Wood's Holl, Mass., the only institution of its kind in the United States. The article is well illustrated. A new discovery which may have far-reaching results in the field of scientific investigation and do much toward a further solution of the problem of the molecular construction of matter, was recently made by Siedentopf and Zsigmondy. The discovery is treated under the title "A New German Microscope." The rôle of nitrate and phosphate fertilizers in the richness of wheat in gluten is a topic which will doubtless be of interest to the scientific agriculturist. The Paris correspondent of the SCIENTIFIC AMERICAN describes in detail some of the Paris-Madrid racing automobiles, illustrating his text with clear illustrations. A. Dastre reviews discoveries which have been made in the field of cathode rays and Röntgen rays. Prof. Fleming's four Cantor lectures on Hertzian wave telegraphy recently read at the Society of Arts are to be published in the SUPPLEMENT. The first paper appears in the current issue.

BORELLY'S COMET.

A comet was discovered by Borelly at Marseilles, June 21, in right ascension 21 hours 52 minutes and 52 seconds, and declination —8 minutes 10 seconds. The comet had a daily motion at the time of its observation at Kiel of —7 minutes in right ascension and +44 min. in declination. A nucleus and a tail were observed.

Prof. W. W. Campbell, of Lick Observatory, states that Borelly's comet was observed by Aitken on June 22, in the right ascension 21h. 48m. 6.4s. and declination —7 deg. 0 min. 49 sec. Prof. Tucker states that the comet was observed by Aitken, June 23, in right ascension 21h. 50m. and 51.4s. and declination —6 deg. 09 min. 26 sec.

On June 24 Borelly's comet was observed by Aitken in right ascension 21h. 49m. 52s.; declination —5 deg. 8 min. 48 sec. The comet was also observed at Carleton College Observatory on June 23 in right ascension 21h. 50m. 50s. and declination —6 deg. 7 min. 38 sec.

ALEXANDER MELVILLE CLARK.

It is with deep regret that we are constrained to announce the death on June 3, at the age of 54, of Mr. Alexander Melville Clark, of London, England, who for many years was the head of the firm of Messrs. A. M. & William Clark, and in that position acted in the capacity of our London correspondent. Mr. Clark was a man of marked abilities, and was widely respected and admired in his profession. He was greatly interested in the "Chartered Institute of Patent Agents," and was largely instrumental in introducing rules which have done much toward raising the standard governing the registration of attorneys in Great Britain. Mr. Clark was himself a Fellow of the Institute. He was a gentleman of sterling character and pronounced ability, and as one of the leading members of the profession his loss will be greatly felt, not only on the other side, but among those in America who have had an opportunity of coming in contact with his agreeable personality.