NEW YORK MEETING OF THE SOCIETY OF CHEMICAL INDUSTRY.

For the first time in its history, the Society of Chemical Industry has met in America. In the Gymnasium of Columbia University the last meeting was called to order on September 8 by Sir William Ramsay, the retiring president of the society. Following the usual custom, Sir William delivered the annual address, selecting as his subject "The Education of a Technical Chemist." The more striking portions of the address were those dealing with Sir William's ideal system of chemical instruction, of which the following is an abstract. The complete text of the paper appears in the current issue of the SUPPLEMENT.

"I have wondered," said Sir William, "if it might not be possible to establish a training school for technical chemists somewhat on the following lines: To start an association having for its object the encouragement of invention, each member of which would subscribe a certain sum for the erection of buildings and plant. There would need to be a number of isolated buildings, and a considerable collection of stock plant of a small scale—stills, tanks, evaporating pans, filter presses, vacuum filters, centrifugal machines, crystallizing vats, and so on. The work should be furnished with steam and electric current. Such a syndicate might let it be known that they were willing to make arrangements with inventors, or with syndicates which had secured the patents of an invention, or secured an option on such patents. The superintendent or professor should be provided with a staff of assistants, who would be each in charge of one building—that is, of one operation. Students would be admitted for an appropriate premium.

"Supposing an idea to be brought to the notice of the directors, they would consult as to whether it should be accepted or not. If accepted, then the share of profits would be arranged with the patentee, should it prove successful. It would be committed to the charge of one of the staff, who would first work it out in the laboratory with the aid of a staff of students. If it then seemed feasible, it would be tried on a comparatively small scale, dealing with hundredweights, in one of the special buildings, those students who had investigated the process in the laboratory sharing in the larger scale operations. The surmounting of difficulties in the transition, the perfecting of the process, the making of working drawings of the requisite plant, would afford the best of all training to students, and in case the process proved a commercial success, these students who had helped to elaborate the process would be naturally the first to obtain employment in works, should they be erected. At the same time, manufacturers would naturally be anxious to obtain the services of men trained in so good a school.

"The education of a chemist (and the word 'chemist,' of course, includes the qualification "technical chemist") must be conceived in the sense that it consists in an effort to produce an attitude of mind rather than to instill definite knowledge. In short, it is the inventive faculty which must be cultivated.

"My contention is that most of the lads who enter a chemical laboratory are able to receive some inspiration, or to have a latent inspiration developed, which will fit them to become inventive chemists.

"Now, how can this be brought about? The answer is perfectly simple: by offering them examples. Every teacher in the laboratory, from senior professor to junior assistant, must be engaged in research, and most important of all, they must not be reticent, but willing to converse freely on their problems.

"Above all, not too much teaching. The essence of scientific progress is the well-worn method of trial and failure. It is simply horrible to think of the travesty of teaching in vogue in some of our colleges, where everything is provided, and where the students add one solution to another by word of command and record their results in special notebooks constructed for the purpose. What do they learn? To obey? That should have been taught in the nursery. Manipulation? Manipulation consists in constructing what is required, not in using what is given. I had rather see a youth commit the Æneid to heart than carry out such time-wasting soul-destroying routine operations. The first may result in a stronger memory; the second is fatal to all originality.

"And now let me discuss a question which has not given difficulty in America, I understand, but which has greatly retarded the advance of knowledge and research in England. I refer to examinations. It may well be introduced here, for, it may be asked, Should only a graduate be recognized as worthy to occupy a junior teaching position? To this I would reply: Let the choice be free. The older I get the less I believe in university degrees as a test of capacity. Perhaps the reason is the manner in which degrees are awarded in England; the degree follows on one, or at most two examinations, often by men who know the candidate only as a number and whose idea of examination often is to set questions to trip the candidate, and not to draw out what he can do. Indeed, it raises the question which I have mentioned earlier in this address. The examination is so contrived as to elicit what a man knows rather than what he can do.

"The pernicious system of competitive scholarships and fellowships, instead of eleemosynary support given to the necessitous and deserving youth, has also contributed much to the debasement of the scientific spirit; for it has early implanted in the young mind the idea that to outrun his fellows and to work solely for a money reward are the ends to be aimed at, instead of the joy of the exercise of a divine gift and the using of that gift for the benefit of man. It is true that to earn money is a necessity; it is in no way a wrong aim; but it is not the chief aim, and money should be earned as a reward for useful labor, not for success in scholastic competitions.

"In conclusion, let me make one more remark. It is that the scientific curiosity of to-day often becomes the trade necessity of to-morrow. The purely scientific investigator who is free to follow indications of no apparent commercial import has not infrequently made discoveries of a radical nature, which have entirely changed some particular industry. I do not recommend the one to the exclusion of the other; both are best, and both are best attained by an intimate association between the universities and the chemical works. The investigator often learns much by the study of industrial processes. The chemical manufacturer who is keenly alive to his own interests will not fail to keep himself in touch with every discovery, however little it appears to be connected with his own industry.

"To quote from the 'Rules of Political Conduct,' written for the people of Japan 1,300 years ago: 'The imperative duty of man is to sacrifice his private interest to the public good. Selfishness forbids co-operation, and without co-operation there cannot be any great achievement.'"

It was decided to hold the next meeting in London in the latter part of July. Sir William Ramsay then presented the society's medal to Prof. Remsen for "conspicuous service rendered to applied chemistry by research, discovery, invention or improvements in process."

LAUNCH OF THE FIRST TURBINE-PROPELLED LINER FOR TRANSATLANTIC TRAFFIC.

The launch of the vessel which is destined to be the pioneer of the trans-Atlantic turbine-propelled liner, and thus mark a new era in the history of navigation, was recently carried out at Belfast, Ireland. This ship, which is named the "Victorian," has been built for the Allan Steamship Line, plying between Glasgow and Canada, by the firm of Workman, Clark & Co. The vessel was originally designed for propulsion by the ordinary reciprocating engines, but at the time the contract was undertaken by the shipbuilders, the efficiency of the application of the steam turbine to smaller passenger craft, such as is engaged upon the Clyde and across the English Channel, had so conclusively asserted itself, that it was decided to install this system of propulsion in the latest addition to the Allan fleet. Some slight modifications had to be carried out in the designs of the boat to accommodate the turbines to the best advantage, but these alterations have appreciably increased the beauty of the boat, which has somewhat finer lines and is more handsome than the usual boat of this class.

The vessel measures 540 feet in length over all; beam, 60 feet; depth, 42 feet 6 inches; displacement, 13,000 tons. The boat has eight spacious decks, of which six will be for the convenience of the passengers. The captain's bridge is 80 feet above the keel. There is accommodation for 1,300 passengers; that for the first-class being placed amidships. The first-class dining rooms extend the full width of the boat, and there is seating accommodation for 400 passengers.

The "Victorian" is divided into eleven watertight compartments, and three of the decks extend from stem to stern and are made of steel throughout. The cellular double bottom as well as the peaks are arranged for carrying the water ballast.

The turbines with which the liner is to be propelled are the largest that have yet been constructed. They are to be of the Parsons marine type, and they have been erected at the shipyard of the builders of the vessel by arrangement with the Parsons company. There are five of these huge turbines, three utilized for the forward propulsion of the vessel, and two for reversing. The power will be transmitted through three propellers. The center forward turbine is the high-pressure, and the ones on either side low-pressure turbines. The reversing machinery is so arranged that it may be employed for driving the vessel astern at full speed, either together or separately. Steam is generated by forty-eight furnaces.

The vessel's speed will not be excessive, considering the speed that is possible with this type of turbine, only 17 knots per hour being contracted for. The "Victorian," however, will be the fastest vessel engaged in the Canadian service. It is anticipated, however, that the vessel will prove noiseless and steadier in the seaway, even when exerting her maximum speed, than one fitted with the general type of reciprocating engines. The "Victorian" is to be employed for the first-class mail service of the Allan Line, and it is expected that the duration of the passage will be reduced by nearly one day.

The vessel has been designed according to Admiralty requirements, and in case of war will be available as an auxiliary cruiser or transport. When engaged in the latter service, she will have accommodations for 3,000 troops.

The erection of the "Victorian" is being followed with the deepest interest by all marine engineers, since as it is essentially an experimental vessel, the results attained will be valuable in the future estimation of the possibilities of this type of propulsion for such traffic. For, although the steam turbine has demonstrated its efficient application for the propulsion of small passenger craft, its adaptability to the heavier demands of ocean requirements has yet to be established. The Allan Line, however, are confident of the success of their policy, and have another vessel of approximately the same dimensions, tonnage, and speed as the "Victorian" well advanced on the stocks, which is also to be turbine-propelled.

A TEST OF THE DOENVIG GLOBE.

A practical test in the open sea was recently carried out with a life-saving globe devised by Capt. Doenvig and which was fully described in a recent issue of the SCIENTIFIC AMERICAN. The globe containing three men was dropped overboard from the steamship "Ragni" in the North Sea, midway between Yarmouth and the Hook of Holland. The globe was launched from greased boards hung over the steamer's side. The sphere entered the water with a splash and disappeared, but quickly came to the surface again and bobbed about like a cork. In accordance with prearrangements the inmates anchored the globe and cooked their first meal within. The sphere was provided with two months' provisions and 20 gallons of water, while the voyagers also carried scientific instruments, fishing lines, etc. The steamship continued on its voyage to England and the buoy finally drifted eastward with the wind.

The globe drifted about for forty-eight hours. During a part of the time the inmates operated the special propeller with which it is equipped in order to maintain their course eastward toward the coast of Holland, and by this means contrived to attain a speed of 2½ knots per hour. The globe carried a Norwegian flag by day and a lantern by night to denote its position. Two days after being cast adrift it approached the Terschelling coast, and apprehending that the globe might drift seaward again, the passengers decided to land, but ultimately changed their plans and induced a trawler to tow them to Yminden. The trial was a complete success, and was not marked by a single mishap of any kind. Two of the passengers suffered severely from sea sickness, owing to the severe manner in which the sphere rolled about. At times, however, it was very steady and floated evenly. Had it contained greater weight in passengers or ballast it would have been much steadier.

THE CURRENT SUPPLEMENT.

In commemoration of the convocation of the Society of Chemical Industry in this city, and of the visit of the famous English chemist, Sir William Ramsay, to this country, the SCIENTIFIC AMERICAN SUPPLEMENT gives the address of Sir William on "The Education of a Technical Chemist," accompanying the text with a full-page portrait, which was especially taken for us in Prof. Ramsay's laboratory in England. Other articles of interest are those by Herman von Schrenk on "The Shapes of Railway Ties." Mr. von Schrenk has given the subject considerable study and thought. Mr. Emile Guarini describes a new system for securing secrecy in wireless telegraphy, which seems to contain much promise. His article is well worth reading by those who have followed the development of wireless signaling. Dr. Max Heim writes instructively on "Natural and Artificial Perfumes." "Some General Rules for Staining Wood" is the title of an article of practical value. In accordance with our promise to present in the SUPPLEMENT an article in each number describing the St. Louis Fair, we publish a complete description of the vast Exposition Palaces, the text being illustrated with handsome pictures especially taken for this issue. Prof. A. Rateau, well known for the part he has played in the development of the steam turbine, makes some suggestions on "Steam Turbine Propulsion for Marine Purposes." Readers of the SCIENTIFIC AMERICAN and of the SUPPLEMENT are doubtless familiar with the new storage battery Thomas A. Edison has invented. It seems that Jungner is also the inventor of a battery based on precisely the same principles. The German inventor claims priority over Edison. Some day the controversy must be fought out in the courts. In the current SUPPLEMENT will be found a very complete description of the Jungner cell, together with the history of its development.