

To determine, in each particular case, the ephemeral rôle of the tissue considered.

Anatomy and Zoology.—The Savigny prize (1500 francs), for the assistance of young travelling zoologists, not in receipt of Government assistance, and who specially occupy themselves with the invertebrate animals of Egypt and Syria; the Thore prize (200 francs), for the best work on the habits and anatomy of one species of European insect.

Medicine and Surgery.—A Montyon prize (2500 francs and mentions of 1500 francs), for a discovery useful in medicine; the Barbier prize (2000 francs), for a discovery of value to medical, surgical or pharmaceutical science, or botany in relation to medicine; the Bréant prize (100,000 francs), for the discovery of a cure for Asiatic cholera or the definite cause of this disease. If the prize is not awarded, the interest will be given for researches bearing on cholera or other epidemic disease. The Godard prize (1000 francs), for the best memoir on the anatomy, physiology, and pathology of the urinogenital organs; the Baron Larrey prize (750 francs), for a work treating of military medicine, surgery, or hygiene; the Bellion prize (1400 francs); the Mège prize (10,000 francs); the Dugate prize (2500 francs), for the best memoir on the diagnostic signs of death and on the best means of preventing premature burial.

Physiology.—A Montyon prize (750 francs), for a work on experimental physiology; the Philipeaux prize (900 francs), for the same; the Lallemand prize (1800 francs), for works relating to the nervous system; the Martin-Damourette prize (1400 francs), for a work on therapeutical physiology; the Pourat prize (1000 francs), for a memoir on the action exercised by the X-rays and the radium rays on the development and nutrition of living cells.

Statistics.—A Montyon prize (1000 francs, and a mention of 500 francs), for the most useful work dealing with statistics.

History of Science.—The Binoux prize (2000 francs).

General Prizes.—These include the Arago, Lavoisier, and Berthelot medals; the Gegner prize (3800 francs); the Lannelongue prize (2000 francs); the Trémont prize (1100 francs); the Wilde prizes (one of 4000 francs and two of 2000 francs), for discoveries in astronomy, physics, chemistry, mineralogy, geology, or experimental mechanics; the Lonchamps prize (4000 francs); the Saintour prize (3000 francs); the Victor Raulin prize (1500 francs), for a work on the meteorology and physics of the globe; the prize founded by Mme. la Marquise de Laplace; the Félix Rivot prize (2500 francs); the Leconte prize (50,000 francs), for important discoveries in mathematics, physics, chemistry, natural history, or medicine; the Houlléguive prize (5000 francs); the Caméré prize (4000 francs); the Jérôme Ponti prize (3500 francs).

Of these, the Pierre Guzman, Lalande, Tchihatchef, Delesse, Desmazières, and Leconte prizes are expressly stated to be offered with preference of nationality.

CHEMICAL RESEARCH AT THE UNIVERSITY OF MANCHESTER.

THE chemical schools at the University of Manchester, probably already the largest in the kingdom, are being enlarged by the addition of a new block of buildings at a cost of about 20,000*l.* Already considerable progress has been made with the building operations, and it is hoped that the new block will be ready for opening in the early autumn of 1909. The chief addition will be a new large laboratory having accommodation for forty students, and fifteen smaller research laboratories.

The following description of the objects of the new buildings is taken from a recent interview with Prof. W. H. Perkin, published in the *Manchester Guardian*. He considers that the loss of the coal-tar industry to this country was due, not only to the manufacturers not realising the importance of employing chemists and carrying out research work, but also to the universities, which were very greatly to blame. Organic chemistry was hardly taught at our universities, and such laboratories as they possessed were poor and ill-equipped. As a consequence, if manufacturers did require chemists they could not obtain them.

It was in 1874 that the original coal-tar colour works at Greenford Green, near Harrow, were sold. The reason for giving up the works was partly owing to the natural dislike for an industrial career of the late Sir William Perkin and his desire to devote himself entirely to research chemistry; but it was also because he recognised that the works could not be satisfactorily carried on and be able to compete successfully with the rising industry in Germany unless he took into the works a large number of research chemists, as the Germans had done. But although inquiries were made at many of the British universities in the hope of finding young men trained in methods of organic chemistry, such men were not forthcoming.

The older universities at that time scarcely recognised organic chemistry; it is doubtful whether they thoroughly appreciated chemistry at all. The newer universities, which at present are doing such good work and of which we are justly proud, had not come into existence. Prof. Perkin said he was strongly of the opinion that the manufacturer of organic products during 1870-1880 was, owing to this neglect of organic chemistry by our universities, placed in a very difficult and practically impossible position.

But, in the meantime, organic chemistry had taken root in Germany, and great schools devoted to this branch of chemical science had been founded. History tells us how the German manufacturers made use of the young chemists who had been trained in these laboratories. Consequently, the works in Germany increased in size and in number, and obtained the world's trade in organic chemicals. Had our universities at this time pursued the same principle, in all probability the coal-tar colour and allied industries would not have been lost; but now this state of things has changed, and "I am convinced that failure on the part of the manufacturers to develop any industry connected with organic chemistry is no longer due to the impossibility of obtaining the services of young chemists of ability."

The scheme which it is hoped to develop in connection with the Manchester Chemical School is laid on the lines which have been found so valuable abroad. Two lines of procedure are open to the manufacturer.

He may send his sons to the university, and as soon as they have passed through the honours B.Sc. course, and have thus received a thoroughly sound general training, they will be fit to engage in research work dealing with problems of a technical nature, either suggested by the university professors or by the manufacturers. Such a course, extending over two or more years, will be the best preparation for an industrial career.

Another way in which the manufacturers can be helped if they wish to solve a difficult problem or invent some new process is to place at their disposal one of the smaller research rooms. In this room his own research chemist from the works can, under the best conditions, investigate the problem, either alone or with assistance from the university staff. If he happens to have no research chemist available for the purpose, one of the university graduates can be engaged to work under the professor's superintendence.

The University will, however, not open its doors to do purely routine analysis, ordinary commercial work, or patent litigation. It lays itself out to train research chemists or help by research work, and in this direction alone.

WATERS AND GLACIERS.

UNDERGROUND waters play a considerable part in recent researches on French caves (*Spelunca*, tome vii., 1907-8, Nos. 47-52). M. Fournier's observations in the Jura (Nos. 47 and 50) are largely concerned with following out the courses of streams that are used for household purposes. He agrees with M. Martel that springs may be regarded with suspicion when their temperature varies by even 1° C. from that of water in the same region which is known to come from considerable depths. A number of caves in various levels of Jurassic limestone are drawn in plan and section, and the continuity of certain streams has been proved by the use