

of jewellery; decision regarding the nature of the principal gift awaits the intimation of Prof. Baker's wishes. It is known, however, that Prof. Baker, whose interest in the establishment of the College hostel has resulted in so marked a development in the students' social life, is anxious to commemorate his association with the Imperial College by placing a clock in the quadrangle, and intends to devote the major part of the presentation fund to that purpose.

#### New Buildings at Rothamsted

THE annual inspection of the experimental plots and laboratories at Rothamsted on June 21 was made the occasion of the official opening of a new block of buildings at the farm and the inauguration of an extensive electrical installation in the farm buildings. The Right Hon. Sir John Gilmour, Minister of Agriculture, declared the buildings open, in the presence of a large gathering of guests representing all branches of agriculture and the allied industries, and many of the visitors came from distant parts of the Empire. The new block of buildings will serve both the field experimental and demonstration sides of the farm. It contains an artificial manure store, working and office accommodation for the field experimental staff, and equipment to deal with the drying and preparation of the numerous samples taken in the course of the modern experiments. The purpose of the demonstration room is to facilitate the presentation of the field results which have direct practical interest in a way which is easily grasped by visitors. Diagrams and models take the place of tables of figures. Good types of machinery are illustrated, successful rations fed on the farm are on record, and exhibits of plant disease are set up as they become available. The electrical installation, designed by the General Electric Company, Ltd., will be of the most modern and complete kind, and will provide very valuable information as to the cost and general efficiency of motor-driven farm machinery in comparison with the older oil-driven type. The many visitors to Rothamsted are always interested in the excellent collection of modern implements loaned or presented by the makers. The installation of electrical equipment will greatly add to the demonstration value of this side of the farm.

#### Southern Railway Electrification

APPRECIABLE progress is being made on the Southern Railway's London-Brighton electrification scheme. According to the *Electrician* of June 24, 'stream-lined' electric trains have been undergoing night time tests. The first half of the new scheme—the extension to Three Bridges—will be opened on July 17. Thirty-three new trains will be employed, fitted with high speed motors and stream-lined, so that speeds of 70 miles an hour will be possible. The third class compartments have been built like the old first class compartments, and extra width has been given to the seats. The coaches have been built to the maximum width limit of the track, so it is impossible to use the 'bay window' type of look-out for the guard. The guards will see the signals through a periscope which projects through the roof. The signalling system has been changed throughout the route from the semaphore

to the colour-light type. Whenever a train passes, the signals are automatically put to danger. An ingenious device is fitted in every signal-box which enables the signalman to know the exact nature of the trains that are approaching and their times. From July 17 there will be 61 trains running daily from London to Three Bridges, compared with 27 at present, while Three Bridges will have 57 trains to London in place of 19. The fastest trains have been timed to do the 30 miles in 39 minutes, but the average time for all the trains has been reduced from 60 to 52 minutes. The second stage of the scheme will probably be completed by March next.

#### Gyro-stabilisers for Liners

ALTHOUGH the theory of the gyroscope has been taught for more than fifty years in several universities, it is only recently that the instalment of gyro-stabilisers for ships, yachts, and aircraft carriers has begun to be adopted. The largest gyro-stabilising plant in the world has recently been completed for the new 46,000-ton luxury Italian liner *Conte-di-Savoia* at the works of Messrs. Vickers, Armstrong, Ltd., Barrow-in-Furness. An interesting account of the plant is given in the *Metropolitan-Vickers Gazette* for April. The plant consists of three identical stabiliser equipments, each one of which can function as a stabiliser independently of the other two. The rotating element in each consists of two solid forged steel disks. The rotating part (the rotor) weighs 110 tons and at normal working speeds it rotates at 910 revolutions per minute, being driven by a spinning electric motor mounted directly on the shaft. This motor is of the three-phase type and gives 560 horse-power at the normal speed. It is capable of giving 750 horse-power for 90 minutes during the accelerating period. The Sperry gyro-stabiliser is used, and this never allows the vessel to start rolling. A single wave can start a roll. In an unstabilised vessel, should the period of the rolling swings and the waves be the same, resonance might occur, and if the damping were small the rolling might become dangerous. Usually, however, the waves are only synchronous with the ship's natural swing for a brief period, and so its maximum swing is due to the accumulated effects of the waves. The Sperry device quenches the effects of these waves one by one, and so the stresses and strains on the hull of a stabilised ship are comparatively slight.

#### Human Improvability

DR. C. S. MYERS contributes an article on "Human Improvability" to a recent issue of the *Bristol Medical-Chirurgical Journal* (vol. 49, No. 183). He says that the problem of human improvability is as interesting as it is difficult. One difficulty lies in the definition of *improvement*, which is not necessarily synonymous with *progress*, and for which we can have only subjective criteria. The prevailing biological view is that all changes in living form and function are evoked by accident, and are perpetuated by heredity and by their suitability to the environment; improvement might then be regarded as involving a more perfect adaptation to the physical and social environment.