

the diversion of a grass driving road which now cuts across the earthwork, without prejudice to any legal question.

To prevent other stones from falling it is suggested by the societies mentioned that the trilithon which has slewed round and also a leaning-stone be first examined with a view to maintaining them in safety. It is understood that no excavation beyond what is absolutely necessary will be allowed. This examination will show what can be done and ought to be done with all the standing Sarsens. It is advised that the monolith and lintel, which fell three months ago, be replaced, the companion Sarsen being made safe against the effects of the fall. Further, the societies recommend the erection of the great trilithon which fell in 1797, the exact place of which is known. All the rest they would leave as it is, though in some cases the place of fallen stones is known with fair certainty. The questions of how best to fix more firmly in the ground the stones now standing, and how best to re-erect the two trilithons which have fallen in the last 104 years, is left to engineering experts.

A STUDENT'S DRUM RECORDER.¹

THIS admirable instrument consists of five parts easily detachable, viz. (i.) an adjustable tripod, which carries on one foot (ii.) a steel bracket for the attachment of the appendances incident to an observation; and (iii.) a central adjustable rod so fashioned as to receive (iv.) the drum, the heads of which are widely perforated for purposes of manipulation; and (v.) a clockwork driver, which is keyed at two points for inser-

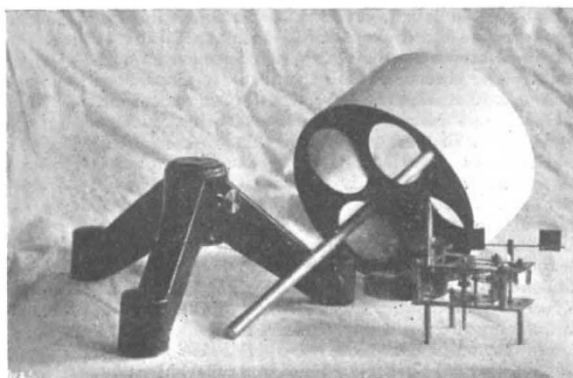


FIG. 1.—A Drum Recorder dismounted to show its parts.

tion into the head of the rod. The special novelty of the instrument lies in the driver, which is so constructed that when at work it and the drum are together rotated. The driver is, moreover, set in a metal framework supported upon three feet, upon which it rests when not in use, adequately protected. Its working parts are all exposed, and there are no accessories. The arbor of the spring-wheel above, and of the main driving-wheel below, are each so keyed as to fit into the head of the rod or axle, the former being intended for slow motion, the latter for quick. For one winding the drum will run at its most rapid rate for 12-13 minutes, at its slowest for 16-17, allowance being made for adjustment of the wings of the "fly," which as a whole can be itself easily removed to ensure the maximum obtainable speed. The instrument is a triumph of ingenuity and good workmanship, and we have nought but praise to accord it. To produce at little more than one-fourth the price of the conventional drum-recorder a substitute in efficiency its equal, is to deserve well of the scientific public. This drum supplies a want long felt by teachers, and is bound to become popular. We heartily wish it the success it deserves.

¹ By W. E. Pye and Co., "Granta Works," Mill Lane, Cambridge. Price 70s.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

MR. HERBERT F. ROBERTS, instructor in botany in Washington University, at St. Louis, Missouri, U.S.A., has been elected to the chair of botany in the Kansas State Agricultural College.

For the last two or three decades the engineering profession of Austria and Hungary spared no efforts to raise the technical institutions throughout those countries to the standard of the universities and to obtain for the former some of the more important academic privileges and powers which the latter have enjoyed since their establishment. The first aim of the leading members of the said profession was that the technical institutions should be authorised by the Government to grant degrees which, from an academic point of view, should be regarded as equal to those granted by the universities. We now notice, therefore, with satisfaction that their endeavours have been finally crowned with the desired success, and that the Minister of Public Instruction in Austria held, on April the 4th, a meeting which was attended by representatives of almost every technical institution in that country, and on this occasion announced the Government's intention of introducing a special statute by means of which the technical high schools should be empowered to confer the degree of Doctor of "Rerum Technicarum" upon students whose scientific attainments entitle them to that distinction. A special examining body will be appointed for that purpose, and some of the examiners, it is urged, should be at the same time members of the teaching staff in connection with some of the universities; the examinations, again, will be conducted on the same lines as those prescribed by the philosophical faculty of a university for the bestowal of the degree of Ph.D. The acquirement of that degree, however, will not—at least for the present—be made compulsory for all students of the technical academies; those, on the other hand, who attain it will, of course, be given special precedence in the case of Government appointments, which are usually accessible to all graduates of the recognised technical institutions by open competition.

SCIENTIFIC SERIALS.

Bulletin of the American Mathematical Society, March.—Prof. T. F. Holgate reports the December meeting of the Chicago section of the Society (December 27 and 28, 1900), and gives abstracts of several of the twenty-two papers which were read. In addition there is printed a paper by Prof. Hathaway on pure mathematics for engineering students, which was followed by an interesting discussion. The subject was treated under the heads (1) its utility; (2) methods of instruction; (3) the course; and (4) the instructor.—A paper read by Prof. Newson, at the February meeting, on indirect circular transformations and mixed groups, is supplementary to a paper entitled "Continuous Groups of Circular Transformations" (which appeared in the *Bulletin* for December, 1897), and deals with indirect circular transformations and the mixed groups obtained by combining these with the direct transformations. Prof. E. W. Brown reviews, at some length, the scientific papers of J. Couch Adams and the lectures on the Lunar theory, (vol. ii. Parts 1 and 2), edited by Profs. R. A. Sampson and W. G. Adams. Then follows, in English, the notice on M. Hermite, by M. C. Jordan, an address delivered at the meeting of the Paris Academy of Sciences, January 21, 1901.—The notes, as usual, cover a wide ground, and there is the usual portion appropriated to new publications.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, March 14.—"On the Ionisation of Atmospheric Air." By C. T. R. Wilson, F.R.S., Fellow of Sidney Sussex College, Cambridge.

In a preliminary note (*Camb. Phil. Soc. Proc.*, November 26, 1900) it was stated that a body, charged with electricity and suspended within a vessel containing dust-free air, loses its charge by leakage through the air. The same conclusion was arrived at by Geitel in a paper published a few days previously (*Physikalische Zeitschrift*, 2 Jahrgang, No. 8, pp. 116-119). The leakage