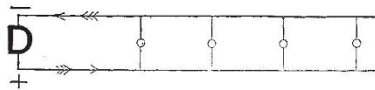


*Dynamo Circuits Contractions*

Example:—



or D for Dynamo.

T +	„	Terminal positive.
T -	„	Terminal negative.
E.M.	„	Electro-magnet.
or F.M.	„	Field Magnet.
c.p.	„	candle-power of a lamp.
A.M.	„	Ampere meter.
V.M.	„	Volt-meter.
S.W.G.,	„	Standard wire gauge.

*For use in Formula*

$R_a R_m R_e$	„	Resistance of armature, magnets, and external circuit respectively.
$C_a C_m C_e$	„	Current in armature, magnets, and external circuit respectively.
$L_s$	„	coefficient of self-induction.
$L_m$	„	coefficient of mutual induction.

In the above notation the first letter of the most important words has been used wherever it was found practicable to do so, and the recurrence of the same letter under similar circumstances avoided as much as possible. In cases where no ambiguity can occur, such as H for the heat in Joules, and H for the horizontal intensity of the terrestrial magnetism;  $m$  for metre, and  $m$  for magnetic strength of pole;  $\bar{V}$  for velocity, and  $v$  for volts, it will be observed that the same letters appear in each case.

M. Hospitalier, the Secretary for the French Committee on this subject, came over from Paris specially to take part in the discussion, and related what had already been done by him in Paris.

Prof. Forbes, Mr. John Munro, Prof. Ayrton, Dr. Fleming, Prof. Hughes, Prof. Silvanus Thompson, and others took part in the discussion, and generally agreed that a uniform system was much required. The paper, they said, had given a very fair start to this being accomplished.

The author replied that he was glad the Society had agreed so readily to form a thoroughly representative committee, and hoped that their work would be not only speedily accomplished but satisfactory to all concerned.

### THE JUBILEE OF THE STATISTICAL SOCIETY

THE Statistical Society has been holding a series of meetings during the present week in celebration of the jubilee of its foundation. The meeting is really an International Congress of Statistics, some of the most eminent foreign statisticians being present as the guests of the Society; among others Sig. Bodio, of Rome; MM. Keleti, Körösi, and Prof. Neumann-Spoller, of Buda-Pesth; Prof. Levasseur and M. de Foville, of Paris; Gen. F. A. Walker, of the United States, Gen. Liagre, and others. The meetings have been held in the theatre of London University, and several subjects of much statistical importance have been introduced for discussion. One of them was the claim of statistics to be considered as a science, discussed at some length in the address of the President, Sir Rawson W. Rawson. Statistics, as usually treated in this country, little more than the mere calculating of numbers, is a mere mechanical operation; but which, treated as some of the most eminent statisticians have treated it, as dealing with the structure of human society, then it certainly becomes amenable to scientific methods. Sir Rawson Rawson referred further to the want of organisation in the collection and publication of official statistics in this country, and rightly advocated reform in this respect. Among the other papers read on Monday were—a sketch of the history of the Society, by Dr. F. J. Moutat; “Statistical Developments, with special reference to Statistics as a Science,” by Dr. W. A. Guy, F.R.S.; and on “Statistics and their Enemies,” by M. de Foville. One of the principal papers on Tuesday was by Mr. R. Giffen, on “Some General Uses of Statistical Knowledge,”

in which, among other things, he referred to the rapid increase of the population of Europe during the last century as compared with the increase in China and other Asiatic countries (except India) and in Africa. Should the present rate of European increase continue, the population of our continent in another century will be 1000 millions, whilst that of the United States would be 800 millions. Mr. Giffen maintained that the increase in Europe had been accompanied by a corresponding increase in the means of subsistence and improvement in the position of all classes.

Mr. J. S. Jeans read a paper “On Uniformity of Statistics.” He held the chief *desiderata* required with a view to the improvement and co-ordination of the statistical work undertaken by different Government bureaux were: (1) an agreement as to the major facts necessary to be collected for each special department of statistics; (2) uniformity in the processes by which these facts were got together; (3) co-ordination of the methods whereby the materials thus collected were systematised and made use of; (4) the adoption, as far as possible, of the calendar year as the universal statistical period, so that when comparisons were made they should always relate to the same dates; (5) the general adoption of the metrical system of weights, measures, and currency.

Herr Körösi spoke “On the Unification of Census Record Tables.” The voluminous and polyglot census results of the world were, he found, practically non-comparable, and he proceeded to sketch a uniform scheme of record tables by which we should arrive at one bound at the highest aim of statistics—the possession of a uniform description of the different nations and of all mankind as regarded sex, age, civil state, illiteracy, occupations, &c.

Mr. F. Y. Edgeworth, in a paper entitled “The Methods of Statistics,” confined himself to the treatment of numerical means. He showed that if we take several means of phenomena belonging to one and the same class (e.g. statures of men), each mean derived from numerous observations, the set of values thus presented would in general fulfil a certain simple mathematical law. The general formula involved a constant or coefficient peculiar to each class of phenomena, which must be discovered by experience. When this operation had been performed we had an apparatus for testing whether any given mean was or was not exceptional, indicative that the set of things of which the *datum* was the mean might (as compared with other phenomena of the same general class) be regarded as belonging to a distinct species. A pretty illustration of important principles was afforded by the statistics of a wasp’s nest, “the image of trade which wasps entering and issuing from their nest present.” It appeared that the exports and imports of this miniature commerce fluctuated with mathematical regularity. As further illustrations of the variety of interests amenable to the general law, he adduced the attendance of the members of a club at a *table d’hôte*, and the frequency of dactyls in the Latin hexameter. The conditions postulated by the Calculus of Probabilities were particularly well exemplified by the fluctuations of the Virgilian rhythm. In conclusion, he alluded to the simpler methods of statistics, and maintained that the mathematical, as compared with the more elementary, organon could produce the same effect with less trouble, or, with the same trouble, greater effect.

M. Emile Levasseur, Member of the Institute and Professor at the College of France, initiated a discussion on the graphic method applied to statistics, exhibiting diagrams and cartograms or statistical maps illustrating his views. Prof. Marshall, of Cambridge, who followed, advocated the use of a standard gauge for historical curves in order to simplify references to the graphic method of statistics, and pointed out dangers in the employment of curves arising from their deceptive appearance to the untrained eye. He suggested a ready means of testing the values of curves under comparison.

Yesterday was entirely occupied by a conference and discussion on the subject of an International Statistical Institute, the establishment of which was virtually agreed to.

### UNIVERSITY AND EDUCATIONAL INTELLIGENCE

CAMBRIDGE.—At the annual election at St. John’s College on June 22, the following awards were made to students of Mathematics, Natural Science, and Medicine:—

Foundation Scholarships.—Mathematics: Love, Fletcher