ber is one that would be called in general algebra a multiplex, as (5, 3) or (3, 6, 2, 7).

Several tables of homogeneous functions, distribution functions, and enumerations close the first volume.

Section seven is devoted to the algebraic side of the partition of numbers, giving in some detail the present state of the theory, but omitting the purely arithmetic side. There are given here further developments connected with symmetric functions.

Section eight considers the theory of partitions as based upon Diophantine inequalities, generalizing the whole treatment. A chapter is devoted to the further study by this means of magic squares, the object being their enumeration rather than construction.

Sections nine and ten study partitions in two dimensions, including a complete solution of another long-standing problem. The problem of three-dimensional partitions relating to a cubic lattice is also attacked.

Section eleven relates to symmetric functions of several systems of quantities with applications to distribution functions.

The second volume closes with tables of symmetric functions of two systems, and enumeration of solid graphs.

If one were to undertake to characterize the treatise of Professor MacMahon briefly he would probably best state its field by saying that it is a development of the algebra of symmetric functions with applicatin to various generating expressions whose coefficients find use in enumeration problems of distribution. Professor MacMahon has occupied himself with the development of this theory for some years and the treatise is a systematic presentation of his results. No brief account can be given of the very skilful methods employed. It shows amply that alongside of the alternating functions so long studied in determinant forms, the symmetric functions are equally important and have their field of application. It exemplifies how different branches of mathematics can be correlated so as to be useful in reducing problems. It also draws strongly attention to the fact that there still remains in the field of algebraic form plenty of opportunity for the interested student to do research work of high order. Indeed it would seem that courses on symmetric functions at least should be offered alongside of other courses in algebra, such as theory of equations, determinants, groups, and the like. The whole theory of the construction of algebraic forms for certain specific purposes has been enriched here with a valuable contribution.

JAMES BYRNIE SHAW

SPECIAL ARTICLES

INHERITANCE OF OIL IN COTTON

THE table of oil percentages given below suggests the possibility of producing divergent strains or biotypes from a "variety" of cotton, the one having seeds relatively high in oil content, the other relatively low in oil content.

The top line of figures gives the analysis (ether extract) of the seed from several mother plants, followed in column by the analysis of the seed of three of their progeny plants, respectively.

	Parent						
	17.33	20.64	16.58	18.97	16.79	18.92	16.87
Progeny.....	18.21	22.00	17.16	22.10	17.75	19.37	18.47
	18.67	20.82	18.40	21.17	17.86	19.45	18.92
	19.13	21.06	17.86	21.36	17.52	19.19	18.40

The three "high" parents have an average of 19.51 per cent. oil, and their nine progeny plants an average of 20.72 per cent. oil.

The four "low" parents have an average of 16.89 per cent. oil, and their twelve progeny plants an average of 18.20 per cent. oil.

The maximum difference between parents is 4.06 per cent. oil, and the maximum difference between plants of the progeny generation is 4.94 per cent. oil.

A seasonal variation raising the oil content of all plants in the progeny year is noted.

A later report will give the correlation between oil content of the seed and other characters.

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