

BOOK REVIEWS

Éléments de géométrie algébrique. Par A. Grothendieck, rédigés avec la collaboration de J. Dieudonné. Publications de l'Institut des Hautes Études Scientifiques No. 4, Paris, 1960. 228 pp. 27 NF.

The present work, of which Chapters 0 and I are now appearing together, is one of the major landmarks in the development of algebraic geometry. It plans to cover eventually everything that is known in algebraic geometry over arbitrary ground rings, and of course a lot more besides. A tentative list of its chapters is as follows:

- Chapter
- I. Le langage des schémas.
 - II. Étude globale élémentaire de quelques classes de morphismes.
 - III. Cohomologie des faisceaux algébriques cohérents. Applications.
 - IV. Étude locale des morphismes.
 - V. Procédés élémentaires de construction de schémas.
 - VI. Technique de descente. Méthode générale de construction de schémas.
 - VII. Schémas de groupes, espaces fibrés principaux.
 - VIII. Étude différentielle des espaces fibrés.
 - IX. Le groupe fondamental.
 - X. Résidus et dualité.
 - XI. Théories d'intersection, classes de Chern, théorème de Riemann-Roch.
 - XII. Schémas abéliens et schémas de Picard.
 - XIII. Cohomologie de Weil.

The list is subject to modifications, especially in so far as later chapters are concerned, partly because much of the research needed to complete these chapters remains to be done.

To give the prospective reader some idea of the size of the work, suffice it to say that Chapter I is 134 pages long, that subsequent chapters are expected to be at least as long (probably around 150 pages each), that all chapters are regarded as being open (i.e., subject to additions such as are deemed necessary in the course of the writing), and that Chapters 0 and I together weigh 1 and 3/4 pounds in their present form.

In order to get a more specific idea of what is to come, one should consult first Grothendieck's address to the International Congress at