By introducing parallel displacements which preserve the structure of the fibres, one may pose the usual questions of Riemannian geometry in this new setting.

The first part of the book is devoted to curve-theory and, more generally, to "symplectic" distributions, which must be odd-dimensional. The last part deals with surfaces in a three-dimensional space.

Although some attempt has been made to give intrinsic and global formulations of the subject, the book makes no use of them. Thus the reader must often sort out enumerative indices from component indices. Moreover, since the principal analytical tool is the "repère mobile" of É. Cartan in its classical form, it is easy to confuse points, one-forms and vectors.

There seem to be as many definitions as theorems. Most results are direct consequences of the "fundamental theorem" of curves on surfaces, i.e., the local existence and uniqueness theorems for systems of differential equations. There are few misprints. The book seems to be intended primarily for those well acquainted with the field.

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Collected works of Hidehiko Yamabe. BY R. P. BOAZ. Gordon and Breach, New York (1967). xii + 142 pp.

This book is the memorial edition for the late Professor Hidehiko Yamabe (1923–1960) who left unusually outstanding mathematical research in his short life. Here in the chronological list of his eighteen papers, one sees how wide his interests were and how great his accomplishments.

The first paper listed deals with an arcwise connected sub-group of a Lie group; the fact that the theorem obtained here served to give a rigorous foundation for the so-called holonomy theorem is now very well known. The papers entitled "On the conjecture of Iwasawa and Gleason" (Ann. of Math., **58** (1953)) and "A generalization of a theorem of Gleason" (ibid.) are believed to be his greatest contribution to mathematics. There he demonstrated that a connected locally compact group is a projective limit of a sequence of Lie groups; and, if the locally compact group has no small subgroup, then it is a Lie group. This gives a final answer to a problem called the *fifth problem of Hilbert*.

We also observe in this collection that he was interested in differential geometry. He proposed a conjecture that any simply connected, closed n-dimensional Riemannian manifold always admits an Einstein metric. It is very interesting to know that his conjecture has been affirmed by many geometers so far when and only when they are allowed to put one more additional hypothesis, and to the reviewer's knowledge there are already twenty or more papers that deal with this conjecture.

We find, too, in this book that his interests were also directed to topological dynamics which since then has been developed to a large extent by S. Smale.

The reviewer joins Professor R. P. Boaz, the author of this valuable document, in expressing his reverent sorrow at the early death of a genius who contributed so much to the development of modern mathematics.

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Complex Numbers in Geometry. BY I. M. YAGLOM. Translated by Eric J. F. Primrose. Academic Press, New York and London (1968). XII+243 pp.

Das vorliegende Buch, das schon vorgesehen und auch lesbar ist für mathematisch interessierte Schüler der letzten Klassen höherer Schulen, gibt eine Einführung in die Geometrien der drei Zahlensysteme $a+b\rho$, wo a, b reell und ρ nichtreell mit ρ^2 gleich resp. $-1, 0, 1$ ist. So handelt es sich um Möbiusgeometrie (Geometrie der Punkte und Kreise in der Gaußschen Zahlenebene), Laguerregeometrie (Geometrie der orientierten Geraden und orientierten Kreise in der euklidischen Ebene) und um pseudo-euklidische Geometrie, letztere allerdings formuliert als "Laguerregeometrie" in der hyperbolischen Ebene. Die Kapitelüberschriften des Buches sind: (I) Three Types of Complex Numbers (II) Geometrical Interpretation of Complex Numbers; (III) Circular Transformations and Circular Geometry. Appendix, Non-Euclidean Geometries in the Plane and Complex Numbers.

Für die drei obengenannten Ringe (Körper der komplexen Zahlen, Ring der dualen Zahlen, Ring der anormal-komplexen Zahlen) werden je unendlich große Zahlen eingeführt (und ein zugehöriger Kalkül entwickelt), so daß die Zuordnung zu den Punkten bzw. orientierten Geraden bijektiv gelingt. Der Ref. erlaubt sich hier den Hinweis, daß die Heranziehung der jeweiligen projektiven Geraden auch über den beiden letzten Ringen möglich ist und rechnerisch eine Vereinfachung bedeutet (homogene Schreibweise), da man dann nicht zwischen eigentlichen und uneigentlichen Elementen (inhomogene Schreibweise) bei der Herleitung mancher Formeln zu unterscheiden hat (S. W. Benz, H. Mäurer, *Über die Grundlagen der Laguerre-Geometrie*, Jber. Dt. Math. Verein. **67** (1964), 14–42 und W. Benz: *Über die Grundlagen der Geometrie der Kreise in der pseudo-euklidischen Geometrie*, J. reine angew. Math. (1968–69)).

Die Übersetzung des Buches aus dem Russischen ins Englische ist sicher dazu angetan, manchem Freund des Gegenstandes das Buch erst zugänglich zu machen und manchen Freund hinzuzugewinnen.—Ref. hätte sich gewünscht, daß zu den schon vorhandenen historischen Anmerkungen und Literaturhinweisen noch weitere hinzugetreten wären: So stammt doch z.B. die Herleitung des Satzes von Miquel (bzw. des Satzes von E. Müller) auf S. 35 (bzw. S. 97) von L. Peczar