complex variable methods for two-dimensional problems of the linear theory and the theory of small displacements of thin shells.

In this second edition, the plan is unchanged. However, the constitutive relations are significantly modified and the theory of shells is considerably expanded and modified, including a new chapter on the derivation of the shell equations by asymptotic expansion of the three-dimensional equations of elasticity. The changes bring the work up to date without changing its original intent and scope.

Albert Green is a well known mathematician, now of Oxford University: Wolfgang Zerna is an eminent engineer and professor at the Ruhr–Universitat of West Germany. Their high-level monograph is the most authoritative, complete and up-to-date treatment of elasticity available. There are extensive references to the original literature and original contributions.

The research worker in this field can not be without this volume. It is also a suitable source for the advanced graduate student. Tensor analysis, differential geometry of surfaces and functions of a complex variable are summarized in the first chapter so that the reader may proceed without reference to other works. One unusual aspect that distinguished the first edition is retained, that is, the use of imbedded or convected coördinates. Some readers find this system rather obtuse, but I have found it to be here a clear conceptual device.

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Hermann Weyl Gesammelte Abhandlugen, Band I, II, III, IV

K. Chandrasekharan, *ed.*
2830 pp. Springer-Verlag, New York, 1968. $42.00

This edition of Hermann Weyl's collected papers ends with a biography of Weyl, written after his death by Claude Chevalley and André Weil. The following passage (my translation) appears in it. "To celebrate his seventieth birthday, the friends and pupils of Hermann Weyl published a volume entitled 'Selecta' of extracts from his works. Perhaps we ought not to feel proud of this method of honoring with bits and pieces the retirement of eminent mathematicians. It is too much for some, and not enough for others." Hermann Weyl was one of the others, as this complete collection of his papers makes clear.

Among all the mathematicians who began their working lives in the 20th century, Weyl was the one who made major contributions in the greatest number of different fields. He alone could stand comparison with the last great universal mathematicians of the 19th century, Henri Poincaré and David Hilbert. So long as he was alive, he embodied a living contact between the main lines of advance in pure mathematics and in theoretical physics. Now he is dead, the contact is broken, and our hopes of comprehending the physical universe by a direct use of creative mathematical imagination are, for the time being, ended.

For any physicist with a taste for history and for style in scientific work, it will be a rewarding experience to browse through these four volumes. The majority of the papers are purely mathematical, but there are a substantial number concerned with physics. Weyl's major contributions to general relativity and to the group-theoretical formulation of quantum mechanics will be found in volumes 2 and 3. By bringing group theory into quantum mechanics, Weyl and Wigner led the way to our modern style of thinking in particle physics. Today the instinctive reaction of every physicist, confronted with an unexplained regularity in the behavior of particles, is to postulate an underlying symmetry group.

Scattered through the four volumes are biographical and historical papers that can be understood by everybody. Many of these are little masterpieces, full of human insight, revealing Weyl's own character as well as the characters of those he is writing about. There are obituary notices of Poincaré (volume 1), Emmy Noether (volume 3) and Hilbert (volume 4). The account of Emmy Noether is particularly fine, summing up in a few pages a whole historical epoch. Here is a thumbnail sketch of Gordan (of the Clebsch–Gordan coefficients): "When he had to listen to others, in classrooms or at meetings, he was always half asleep." And here is Weyl's description of the Bourbaki school of mathematical writing: "The books of the type I refer to are rather like slot machines which fire at you for the price you pay a medley of axioms, definitions, lemmas and theorems, and then remain numb and dead however you shake them."

There is nothing numb and dead in any of Weyl's writing. He once complained that "The gods have imposed upon my writing the yoke of a foreign tongue that was not sung at my cradle." But nobody ever wrote in a foreign tongue with greater mastery.

The editing of these volumes by Chandrasekharan is unobtrusively excellent; the printing and binding by Springer are up to the high standard that the contents demand.

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Thermal Conductivity

C. Y. Ho, R. E. Taylor, *eds.*
(Conf. Proc., Purdue Univ., West Lafayette, Ind., 7–10 Oct. 1968) 1169 pp. Plenum, New York, 1969. $40.00

The publication of conference proceedings, usually after a time delay of about a year, is not normally very useful. *Thermal Conductivity* does not escape from this generic objection. The papers by now have presumably been published in professional journals. The abstracts provide very little information. There is an author index, but no subject index. Use of the book as a reference is difficult.

Despite these reservations, the book has value. The conference covered a broad spectrum of experimental and theoretical techniques, as well as temperatures from cryogenic to several thousand degrees. The materials were divided into solids, liquids, gases, fibers, polymers, soils and biological materials.

I found the most striking feature to be the almost unbelievable discrepancies within the published data. I had assumed that, in an area of physics as mature as thermal conductivity, debates over numerical values would range over at most a fraction of a percent, and that qualitative features would not be ambiguous. But this is not so. Often the published data are so disparate that it is not clear whether thermal conductivity increases or decreases with increasing temperature.

An amusing appendix consists of letters written in response to a proposed new "*f*" unit–the fourier–for a heat conductivity of one watt per