Editorial

IN THE FACE of rapid strides in microwave technology it is appropriate to review from time to time the part played by these TRANSACTIONS. Through an understanding of what the TRANSACTIONS ON MICROWAVE THEORY AND TECHNIQUES can and should do, we may make better use of what we now have, and improve it in the future as well. What, then, do we aim for in our six issues each year?

First, the TRANSACTIONS is an archival journal. As such, it provides a permanent record of progress in the field. This record should be as complete as possible, and above all, it must be as correct as expert reviewers and the editor can make it. Rapid publication of new findings complements the long term value of the TRANSACTIONS. Articles and especially correspondence in recent issues reflect the current state of the art; this information is of immediate service to those working in the field.

In terms of the values mentioned above, what constitutes an outstanding contribution? The stature of the scientific or engineering advance presented, and the clarity of treatment, are hallmarks of lasting value. However, even in the absence of these qualities, a particularly timely result may be of importance. The generally high level of our contributed papers is a measure of the activity in the microwave field. Another indication of this activity is the number of articles on microwave subjects published in other journals. Reviews, discussions of specific devices, interviews, and other topics of interest to those active in the microwave field are being published with increasing frequency. The growing number of text and reference books also marks the maturity of many phases of microwave engineering. These widespread publications encourage our TRANSACTIONS to concentrate on original research contributions.

The rapid growth of microwave publications stems from the vigor with which our technology has advanced into new areas. Ferrites, parametric amplifiers, and masers are examples of this. Further advances in solid-state physics, plasma physics, and materials technology are certain to extend the limits of microwave theory and techniques to shorter wavelengths. Lasers, fiber optics, and other techniques akin to the microwave domain already penetrate the optical spectrum, both visible and infrared. The limits of usefulness for coherent electromagnetic waves extend beyond the visible, as shown by the Mössbauer effect with gamma rays. The spectrum awaiting exploitation is vast, as are the opportunities for advancing the microwave field.

In future years these TRANSACTIONS should contain a fair share of the papers marking significant advances both within and beyond the present microwave region. We wish to keep our contributions in the forefront of progress as new methods and materials are applied to a broader electromagnetic spectrum. Quantum phenomena and solid-state physics, plasmas, cryogenics and other newcomers to our pages are welcome in growing measure as our techniques advance. To balance the new, the subjects of our present contributions show clear promise of being active for many years to come. By furnishing an up-to-date and faithful record of progress, we shall provide the best incentive for continued growth. Let us aim for future TRANSACTIONS that mark the pace of research into a broader field whose origin is today's microwave technology.

——DONALD D. KING, *Editor*