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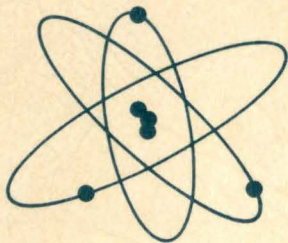
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PROCEEDINGS OF

1957, 1958

**the minnesota
academy of science**



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for the Advancement of Science

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A Note from the Editor—

In 1957, the annual meeting of the Minnesota Academy of Science was held at the Mayo Clinic and Mayo Foundation for Medical Education and Research in Rochester, while in 1958, it took place at the Bemidji State College. The papers which follow are the majority of those read at these two meetings. 1958 marks the centenary of Minnesota statehood. It seems appropriate to note that the wide range of topical interests evident in these pages mark a century of progress by Minnesotans in the disciplines of science.

That science in Minnesota has come far is witnessed by the many institutions of higher learning and research within the State. An outsider may incline to think of the University or the Mayo Foundation when Minnesota is mentioned, but it is clearly worth noting that significant research is being carried on in the smaller educational centers. One has but to consider the contributions to these pages made by scholars from all parts of the State of Minnesota, from its public and private colleges, high schools, government bureaus, and industry.

An Academy of Sciences has the happy function of bringing together interests of scholarship and research and of permitting a perspective on scientific orientations running through several disciplines. It also has the obligation to serve the citizenry of the state who makes its existence possible. The Minnesota Academy of Sciences, founded as early as 1873 and revitalized in 1932, has as its aim the assembling of scientific opinion on as wide a range as can be realized. As part of its public service, it may well give attention to local events and local phenomena, and indeed, it is part of its obligation to do so.

THE MINNESOTA ACADEMY OF SCIENCE

This accounts for the presence in these pages of papers dealing with subjects in the natural and social sciences which give special emphasis to Minnesota and the Northwest. From here, however, there is the transition to interests across the globe, from Australia to Iceland, from Iran to Alaska, or, in fact, to outer space. If this cosmopolitan flavor is set off against a local one, it is apparent that the attachment to science in Minnesota creates a climate permitting an extensive variety of research and a wholesome expression of devotion to the methods of science. As the Minnesota Academy of Science grows, it is hoped that in time a still wider representation of scientific disciplines will be found in these Proceedings.

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