

THE MINERALOGIST IN ADULT EDUCATION¹

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ABSTRACT

Recent interest in mineralogy as a vital part of adult education warrants the encouragement of professional mineralogists. Not only is some knowledge of mineralogy an essential part of a liberal education, but also the support of an educated public is valuable to the science. Furthermore, the collaboration of specialists and non-specialists has frequently led to the identification of new mineral species and to other important scientific contributions.

Mineralogy professors of extension courses and museum associates have long been interested in adult education through mineralogy, but the current interest in the subject, heightened by the rapid growth of mineral clubs and the increasing number of collectors, has meant that other professional mineralogists are becoming involved. Geological consultants and research specialists are now being called on to give advice to individuals and to address club groups, and it seems likely that nearly all professional mineralogists have had to give some assistance of this type recently.

Most mineralogists would probably concede that some knowledge of mineralogy is necessary for a liberal education, and that those who have not had the opportunity for elementary instruction during their youth—and few have had such opportunity—should be given the chance to remedy this loss in adult life.

There are also other important reasons why the mineralogist should encourage this study. A large educated public will be ready and willing to support mineralogical research and the development of earth science. Furthermore, there is always the possibility of receiving from the hobbyist information and specimens of great value to the specialist which would be obtained in no other way.

The British early showed the way in the Geologists' Association, which has already celebrated one hundred years of successful cooperation of geologists and others interested in geology. As Woodward (1894) said in an early Presidential Address:

It must not be forgotten that outside his particular groove, the specialist is on a par with others who seek to gain a general knowledge of geological work and

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progress. The science might advance if specialists only paid heed to it, but it would not thrive without the help and encouragement of the many who take interest in their results.

Despite the eminence of many of its professional members, the amateur continues to be the mainstay of this active organization (Sweeting, 1958). Amateur members make a particularly useful contribution by mapping and studying quarries, excavations, and rock cuts which are only temporarily exposed. Information is recorded and specimens collected by local members on the spot during the brief time when such work is possible.

In North America, although no comparable organization exists, there have been many examples of fruitful collaboration between specialists and non-professionals instructed by them. Perhaps the most famous hobbyist was Colonel Washington A. Roebling, whose only formal mineralogical instruction was in an elementary course at Rensselaer Polytechnic Institute, but whose knowledge was developed as an adult by Foshag and others. His comprehensive research collection, now at the Smithsonian Institution, has been the basis for much work on clay, uranium, and many other minerals, and was extensively used by Larsen for his "Microscopic Determination of the Nonopaque Minerals." As Foshag (1954) has said, "This contribution of Roebling's must be evaluated high among the contributions to our science."

An example of a different type of usefulness may be seen in the life of Magnus Vonsen, a business man whose only formal mineralogical training was obtained through a University of California extension course. He discovered many new California occurrences and two new minerals (Switzer, 1955); the iron magnesium borate, vonsenite, was named in his honour by Eakle. But one of his most interesting scientific contributions was his awakening and developing an interest in mineralogy in a twelve-year-old boy, George Switzer (now Curator of the Division of Mineralogy and Petrology, U. S. National Museum). Many of our mineral clubs have junior sections; it would be interesting to know how many professional mineralogists, present and future, owe their choice of careers to informed and dedicated non-professionals.

Probably the greatest danger in instructing adults is the tendency for the professional to feel superior, a feeling which is seldom justified. Simplicity and clarity are certainly required, but there is neither necessity nor advantage in "talking down" to the mineral collector. There is also the possibility that, as Pfeiffer (1958) has warned: "With the best of intentions we may nevertheless bore him somewhat because, in a fundamental sense, we are all amateurs in popularizing science."

Thistle (1958), of the National Research Council of Canada, contends that the barriers of language and scientific sophistication reduce possible scientific knowledge that may be imparted to non-specialists to about 1 per cent. Other problems, he feels, cut this to 0.01 per cent, although he concedes that even this small amount of knowledge may be interesting and valuable. For mineralogy, the amount of knowledge imparted can be greatly increased by instruction through handling actual specimens and seeing minerals as they occur in nature. Thistle's suggestions, however, may be useful: to assume no technical knowledge on the part of the audience; to omit details; and to use analogy and simile in everyday terms. A generality should never be allowed to stand by itself, but should be followed immediately by examples and anecdotes.

Although mineral clubs are important channels for adult education, a serious danger is the propensity of some groups to deteriorate into organizations of rock collectors and lapidaries and to neglect the more scientific outlook. Here surely mineralogists can help by making the club programmes more stimulating and educational. It has been our experience with the Montreal Gem and Mineral Club that even meetings featuring talks by graduate students on the subjects of their doctoral theses, suitably presented and illustrated, are well attended and well received. Solid information and study about the minerals being collected and polished, their genesis, composition, and structure, can give breadth and significance to the educational programme.

REFERENCES

- FOSHAG, WILLIAM F. (1954): Acceptance of the Roebling Medal of The Mineralogical Society of America, *Am. Mineral.*, **39**, 298.
PFEIFFER, JOHN (1958): Making popular science more popular, *Science*, **127**, 956.
SWEETING, G. S., editor (1958): *The Geologists' Association, 1858-1958*, Benham and Co. Ltd., Colchester, 133.
SWITZER, GEORGE (1955): Memorial of Magnus Vonsen, *Am. Mineral.*, **40**, 286-288.
THISTLE, M. W. (1958): Popularizing science, *Science*, **127**, 951-955.
WOODWARD, H. B. (1894): Presidential Address, *Proc. Geol. Assoc., London*, **13**, 249.

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