

## Desirable Requirement for Scientific Papers Describing Weather Modification Experiments

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In a recent letter (1966) I criticized the JOURNAL OF APPLIED METEOROLOGY for having published a paper dealing with the results of a weather modification experiment on the grounds that the novel silver iodide seeding method used to achieve these results had never been adequately described. I now question for similar reasons whether the JOURNAL OF APPLIED METEOROLOGY should have published another paper (Howell, 1965) in which the description of the seeding operation is again so inadequate that it is impossible to determine important details of the experiment.

The behavior of clouds that are seeded will obviously be dependent on the technique used in the seeding operation. If the object of the seeding is to increase precipitation, there seems no doubt that it may be possible to seed too little, too much, too late, or too soon, and that while one technique may increase precipitation, another may even decrease it.

Since the paper in question fails to provide important data concerning the seeding operation, such as the number, the location, and the schedule of operation of the silver iodide nuclei generators, as well as similar pertinent information about the two other weather

modification methods that were employed, it seems to me that it is of doubtful scientific value.

With the advent of weather modification we in meteorology are entering into a new phase in which we no longer only passively observe and analyze, but in which we now also actively manipulate variables to see what effects we are able to produce. In proceeding with this new effort I think that we would be well advised to follow in the tradition of the older experimental sciences and insist, as they do, that experimental procedures be described explicitly and in sufficient detail that they can be evaluated and, if necessary, repeated by other scientists. If the JOURNAL OF APPLIED METEOROLOGY fails to impose this requirement for publication, which has long been customary in other sciences, I fear that it may compromise its standing as a reputable scientific journal.

### REFERENCES

- Howell, Wallace E., 1965: Twelve years of cloud seeding in the Andes of Northern Peru. *J. Appl. Meteor.*, 4, 693-700.  
Vonnegut, Bernard, 1966: Further comments on "Note on the potentialities of cumulonimbus and hurricane seeding experiments." *J. Appl. Meteor.*, 5, 134-135.