THE IOWA SCIENCE TEACHERS JOURNAL

The Iowa Science Teachers Journal is co-sponsored by the Iowa Academy of Science and the University of Northern Iowa. The journal is dedicated to the improvement of science teaching and to the stimulation of interest in scientific studies. The journal is published tri-annually.

SUBSCRIPTION

For subscriptions, circulation data, additional copies and change of address, write the Managing Editor, ISTJ, Iowa Academy of Science, P.O. Box 868, Cedar Falls, Iowa 50613. Single copies may be obtained for $2.00.; a year’s subscription is $4.50. Any teacher of science in Iowa may obtain a subscription free of charge if a request is mailed to the Managing Editor; all such requests must be made on school stationery.

PUBLICATION POLICY

Manuscripts for publications will be received from all individuals interested in science education at any academic level. Preferential treatment will be given to Academy members and to papers with topics of special scientific and educational interest to science educators in Iowa.

All non-solicited manuscripts submitted to the editor will be reviewed by two authorities in the area concerned. All manuscripts must be typewritten, double-spaced on one side of a sheet and submitted in triplicate. Refer to recent issues of ISTJ for examples of the uniform reference format which is required. Every attempt will be made to publish papers within a year after approval for publication. News items will be published promptly. Publication deadlines are March 31, September 30 and December 31.

For information concerning news items, announcements or articles, contact Carl W. Bollwinkel, Ph.D., Editor, Iowa Science Teachers Journal, Dept. of Teaching, Price Laboratory School, University of Northern Iowa, Cedar Falls, Iowa 50613.

Copyright 1986 by the Iowa Academy of Science. Permission to reprint in non-profit journals may be obtained by writing the Editor of the Iowa Science Teachers Journal. Permission will be granted with the condition that reprinted articles are accompanied by author and ISTJ credit. Requests for commercial use should also be addressed to the editor.

Responsibility

Experiments, laboratory exercises, lecture demonstrations and other descriptions of the use of chemicals, apparatus and instruments are presented in this journal as illustrative and directed at qualified teachers. Although every effort is made to ensure and encourage safe practices and safe use of chemicals, ISTJ cannot assume responsibility for uses made of its published materials. All those teachers planning to use materials from our pages should make choices and develop procedures for laboratory and classroom safety in accordance with local needs and situations.
IOWA SCIENCE TEACHERS JOURNAL

Volume 23 Number 2 Autumn 1986

Contents

2 THE NATURE OF SCIENCE AS A MODEL FOR TEACHING FOR CONCEPUALIZATION
Robert W. Hanson

7 SURVEY SHOWS CHEMISTRY TEXTBOOKS AND TEACHING PRACTICES IN IOWA TO BE CONVENTIONAL
Robert W. Hanson

12 EARTH SCIENCE TEACHER EXCELLENT AND OTHERWISE: IS THERE A DIFFERENCE?
Kenneth Thompson and Darrel Hoff

15 ENVIRONMENTAL EDUCATION TEACHER AND STUDENT NEEDS
Gail George

Departments

22 SCIENCE NOTES 28 SCIENCE CALENDAR 31 EDITOR'S CORNER

This symbol identifies articles of particular interest to elementary teachers of science.

IN MEMORIAM

Dr. Robert W. Hanson

This issue of the Iowa Science Teachers Journal contains two articles submitted by Robert Hanson before his death in the spring of 1986. He is remembered with appreciation for the many articles he submitted to ISTJ and his many years of service to ISTJ as managing editor, to the Iowa Academy of Science as executive director, and to the students of the University of Northern Iowa as professor of chemistry and science education.

The Cover

The cover is an ink drawing, "Quartz Crystal-Autumn Leaves."
The art work was done by

Ed Harris

Harris is Associate Professor of Teaching-Art at Price Laboratory School University of Northern Iowa.