

LAKE EFFECT WEATHER (SNOW) SITUATIONS
INVESTIGATED WITH STUDENT FIELD TEAMS

By

DAVID N. EICHORN and ROBERT B. SYKES, JR.

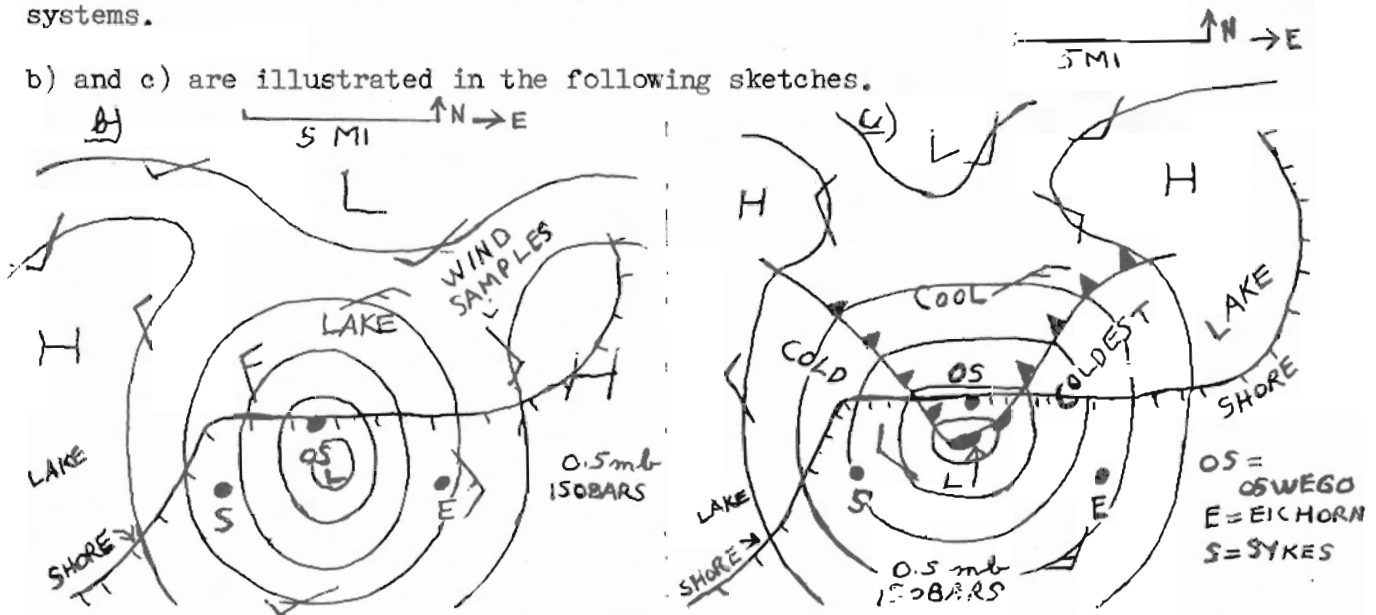
State University of New York
College of Arts and Sciences, Oswego, New York

ABSTRACT from Program for the 33rd Meeting: "Interesting and perplexing Lake Effect Weather Situations (LEWS), especially those relating to Snow Situations (LESS), demand continuing and intensive investigations. While there appear to be some patterns relating to these situations, especially pertaining to cloud streets and variations in snowfall intensities, many irregularities and seemingly strange happenings continue to pose tough challenges. The studies here involve use of some fixed facilities supplemented with mobile task teams. Satellite and regular color photography are used."

Actual presentation differed in part from the Abstract. Some detailed fixed-location, surface and mobile observations in relation to mesoscale proposals for weather systems common to the southeastern Lake Ontario Area, were presented and discussed. The observations seemed to support the proposals relating to the systems which seem to group into three principal patterns:

- a) Meso-scale 'pseudofrontal' systems within the windshift-cloud-precipitation bands commonly associated with frictional and/or thermal convergence,
- b) Meso-scale thermally induced pressure systems, and
- c) Meso-scale frontal and/or pressure systems associated with land breeze developments possessing some attributes of the well-known macro-scale systems.

b) and c) are illustrated in the following sketches.



Existence of such systems has gained support by simultaneous fixed-location observations at intervals varying from 1 to 10 minutes related to instrumental recordings. Passages of systems, including inverted waves, have been accompanied by many drastic weather changes including precipitation. Further studies, perhaps to include meso-scale networks such as during the 1963-1971 Oswego Area studies, are desirable before detailed reporting. A follow-up paper is planned for the 1978 Proceedings.