carbon laboratories. The samples are numbered in stratigraphic order, oldest (M-288a) to youngest (M-291).

Several conclusions may be safely drawn from this study: (i) The time lapse between the Algonquin and Nipissing stages in the Lake Michigan basin was 4000 yr (M-288 to M-291), with Lake Algonquin ending about 8000 yr ago (M-288) when the North Bay outlet became ice free. (ii) Lake Chippewa intervened between the Algonquin and Nipissing stages in the Lake Michigan basin about 5000 yr ago (M-290) and was coincident with the oak-pine period in southwest Michigan. (iii) The Xerothermic period reached a maximum some time after 4000 yr ago and is coincident in time with the Nipissing stage in the Lake Michigan basin.

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References

1. J H. Bretz, *Am. J. Sci.* **249**, 427 (1951).
2. J. Hough, Final report, ONR contract N6051-07133 (1953), p. 27.

4 January 1955.

Unusual Reagent

The authors of an article in the *Journal of Biological Chemistry* [**211**, 168 (1954)] acknowledge a gift of a sample of "standard human brain inhibitor." Presumably this is the basis for man's chronic difficulties in meeting the test. Who will discover the antidote?

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6 January 1955.

Bacitracin

Experiments in this laboratory on the stability of bacitracin have uncovered the interesting fact that bacitracin will form an irreversible gel with certain chemicals.

Two grams of bacitracin dissolved in 5 ml of water, alcohol, or acetone, or mixtures thereof, will form a gel in the presence of 200 mg or less of anethole, anisole, cinnamic aldehyde, and isosafrol. The time for gel formation varies with the chemical and concentration. No gel is formed in the presence of menthol, isopropyl benzene, benzocaine, ascorbic acid, oleic acid, eugenol, isoeugenol or safrol. In the presence of isopropenyl benzene (insoluble in the system) or morpholine, no gel is formed. Using morpholine as a solvent a gel is formed with the bacitracin and isopropenyl benzene. The presence of a conjugated ring system seemed necessary to gel formation except for the anomalous behavior of isoeugenol.

The gelling phenomenon occurred incidental to certain of our pharmaceutical development work and was expanded to the extent described. It is reported here as isolated behavior of bacitracin in the hope that it may be correlated with more direct investigations on the composition of the antibiotic.

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The Individual in Chemical Research

It is a fairly general belief that the individual researcher in chemistry has been supplanted in modern times by the research team. Numerical data to support this generalization apparently have not been collected.

Information on this point can be obtained by counting the number of papers in chemical journals that are written by a single author rather than by groups. There are some obvious flaws in this procedure as a measure of individual scientific endeavor, but the results are, at least, interesting. The percentage of papers written by only one author in the *Journal of the American Chemical Society* (Table 1) has indeed decreased since 1918, indicating a probable decline in individual research.

A further indication that few lone-wolf chemists exist in modern research is offered by the fact that not more than 15 authors in any one year (for the years given in Table 1) published more than two papers without coauthors.

Since the *Journal of the American Chemical Society* is sometimes accused of being primarily for organic chemists (in 1940, for example, five organic chemists were senior authors of about 10 percent of the published papers; since then the percentage from these individuals has declined), a check was also made of the *Journal of Chemical Physics* where organic chemists probably would not be represented. In both 1940 and 1950 this journal had approximately 40

Table 1. Individual papers in the *Journal of the American Chemical Society.*

Year	Total papers*	No. by single author	Percentage
1918	220	100	45
1920	302	131	43
1928	487	169	35
1930	838	244	29
1938	937	183	20
1940	1084	180	17
1948	1557	256	16
1950	2022	282	14

* Taken from reports by the editor published in the *Journal* itself or in *Chemical and Engineering News*; it does not include book reviews.