

1. Preface

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“ WHICH SUBJECTS IN MODERN MATHEMATICS AND
WHICH APPLICATIONS IN MODERN MATHEMATICS
CAN FIND A PLACE IN PROGRAMS OF SECONDARY
SCHOOL INSTRUCTION ? ”

by John G. KEMENY

*(Report to
The International Congress of Mathematicians Stockholm,
August, 1962)*

1. PREFACE

The International Commission on Mathematical Instruction chose the present topic as one to be studied by national sub-commissions in the years 1958 to 1962. When I learned that I was to serve as reporter for this topic at the Stockholm Congress, I contacted all the national subcommissions of ICMI, requesting that reports be sent to me when available. I am very pleased to note that I am now in possession of 21 national reports from all over the world. The following is a summary of these 21 reports, with special emphasis on similarities and differences in points of view.

While I am taking every possible precaution to represent views of various nations accurately and fairly, I fully realize that brief reports cannot reproduce accurately many long years of work. May I therefore take this opportunity to apologize to any mathematician who may feel that the following report is either inaccurate or an insufficient presentation of achievement in his own nation.

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2. THE PROCESS OF CHANGE

Only a very few countries reported that so far little or no attempt to introduce modern mathematics had taken place. Of course, this small number may not be significant, since my sample is biased: Presumably countries in which absolutely no attempt to modernize mathematics has occurred have not filed reports on this topic.

Of the remaining countries, the vast majority report that the attempts to modernize the curricula have consisted mostly of informal discussions amongst mathematics teachers and a number of highly encouraging experiments by individual teachers. It seems to be a universal experience that attempts to teach selected topics from modern mathematics well, in reasonable quantities, can be highly successful.

I shall discuss in somewhat more detail reports of a few countries where national reform movements have taken place.

France had a head-start over most other countries in that the French secondary school mathematics program was even traditionally unusually strong. The typical secondary school teacher in France had a strong university degree in mathematics which both placed France into a good starting position and made it easier to introduce modern ideas. Reform started with a series of experiments by teachers trying out various topics of modern mathematics in the classroom. This led to the writing of a series of articles and monographs which were widely discussed. Eventually, a number of seminars were formed at which secondary school teachers and college professors together discussed pedagogical problems involved in curriculum reform. France is fortunate enough to have persuaded a number of its very famous mathematicians to give lectures to high school