

(genetically such a mating is Dd x Dd) or one partner may be diabetic and the other nondiabetic (genetically the mating is dd x Dd) or both partners may be diabetic (genetically the mating is dd x dd). The relative frequency of diabetic offspring from these three types of matings (assuming essentially the same age distribution for the three sets of offspring) is as 1:2:4. The absolute values will depend on the age distribution of the sample; however, on the average *one-quarter* of the sibs of a diabetic patient with *nondiabetic parents* will be genetically predisposed to diabetes; on the average *one-half* the sibs of a diabetic patient with *one diabetic and one nondiabetic parent* will be genetically predisposed, and *all* offspring of matings in which *both parents are diabetic* will be predisposed to diabetes.

The knowledge that all of the offspring of a mating of two diabetics inherit the predisposition to diabetes is of great importance. If all such persons must develop diabetes, given time, they provide the material needed for studies of the prediabetic state. Also, diabetics obviously ought never to marry diabetics. It would be even safer, if they marry, to choose as mates the offspring of persons who are not the children of diabetics.

Steinberg and Wilder, by genetic analysis of their data, arrive at estimates of the prevalence of diabetes and prediabetes. They conclude that diagnosed diabetics constitute about one per cent of the population of the United States, a conclusion in close agreement with those of others, based on surveys. They estimate that those who are genetically dd, that is, the diagnosed, undetected and potential diabetics, approximate five per cent of the population. As the average age of the population increases more prediabetics will have time to manifest their diabetes, and so the prevalence of frank diabetes must continue to increase as undoubtedly it has increased in the last few decades. Here is a challenge to preventive medicine of more significance even than detection of the undiscovered diabetic.

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FINANCIAL SUPPORT OF RESEARCH

A recent issue of *Science*<sup>1</sup> contained a detailed report on the financial support of medical research in the United States during the past six years. Many readers of *DIABETES* will be interested in certain data contained in the report, and also in information concerning the organization responsible for its preparation.

The Medical Sciences Information Exchange is a cooperative endeavor established in July 1950 within the Division of Medical Sciences of the National Research Council. It is jointly supported by six agencies of the federal government—the Army, the Navy, the Air Force, the Atomic Energy Commission, the Public Health Service, and the Veterans Administration. They maintain it as a clearing house for information on grant and contract support in the medical and allied fields. It compiles data concerning awards for research made by foundations, industries and others, in addition to the government. It is reported that investigators throughout the country, as well as granting agencies, make daily use of the Exchange, an indication of its success in meeting a definite need.

In the report, an analysis was presented of 12,923 research grants registered with the Medical Sciences Information Exchange during the period 1946 through 1951. In these six years \$135,044,125 was awarded, \$83,110,671, or 61.5 per cent, from government and \$51,933,454, or 38.5 per cent, from private sources. The annual funds increased from 4 million dollars in 1946 to 33 million in 1949, and have remained at approximately this level. Government support, 44 per cent in 1946, has steadily increased until in 1951 it provided nearly 66 per cent of the total support of medical research. Funds from private sources increased from 2 million in 1946 to 11 million in 1951; apparently increasing government support of medical research has not diminished the efforts of the private foundations.

Of special interest is the information concerning re-

TABLE I Expenditures for research in diabetes

Year	Government	Private	Total
1946	\$ 0	\$ 6,700	\$ 6,700
1947	25,580	24,800	50,380
1948	141,908	45,411	187,319
1949	242,622	54,841	297,463
1950	309,985	70,771	380,756
1951	353,544	74,505	428,049
1946-1951	\$ 1,073,639	\$ 277,028	\$ 1,350,667

search on diabetes (see Table 1). The total expenditures recorded for the six-year period were over \$1,350,000, four-fifths from the government and one-fifth from private sources. It is of even greater significance to note the rapid increase in the attention given diabetes in this short period. In 1946 the expenditure of only \$6,700 was recorded; all of this came from private funds. In 1951 the sum from private funds had increased eleven-fold, approaching \$75,000; in the same year government support, which began in 1947, climbed beyond \$350,000.

It is apparent that fundamental research bearing ultimately on diabetes may not be classified under this heading. Attention should therefore be directed also to the total sums spent in the general fields relating to diabetes. For metabolism and nutrition the expenditure was \$7,681,603 in the six-year period; 55 per cent was provided by the government. For the endocrine system the amount was \$3,056,095, 75 per cent provided by the government.

A full appraisal of the results of the research activities made possible by these expenditures has not yet been attempted, and indeed is scarcely possible. However, one immediate result is already apparent, namely, the increase in the number of publications reporting investigations, and the establishment of new journals. An important by-product is the training of young investigators who are given the opportunity to develop interests and skills, which should yield dividends soon.

The present report will be viewed with a variety of feelings. Some will feel that nothing but good is indicated by these expenditures for medical research. Others will deplore the dominance of expenditures by the government. Still others will be conscious of the fact that expenditure alone is not an index of achievement. All will agree that even with increased financial support, progress in research will continue to depend on even more important factors—genius, inspiration, and work.

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#### PAST, PRESENT AND FUTURE

The annual meeting of the American Diabetes Association in June marked the conclusion of the twelfth year of its existence. During these dozen years, substantial achievements have been made, as outlined in the address of the retiring President, Dr. Arthur R. Colwell. Not the least of these has been the thorough appraisal of the purposes and policies of the Association, conducted under his leadership. The report of his Committee, presented in the first issue of *DIABETES*, will help to guide our present and future plans.

The meeting itself was highly successful from the standpoint of both attendance and program. The scientific papers were suitably diversified as to subject, and reached a high standard of quality. Many of them have been scheduled for publication in *DIABETES*, some appearing in this issue. An outstanding event was the delivery of the Banting Memorial Lecture on "Insulin" by Professor Charles H. Best.

The thirteenth year of this Association presents a new opportunity both to maintain and develop activities now in progress and to initiate new projects by which to achieve more fully the Association's objectives. Among the latter, two deserve mention at this time. One is the presentation of a post graduate course for advanced training of physicians in diabetes and related physiological problems; this is scheduled for January 19, 20 and 21 in Toronto. A second is the offer of a prize for the best paper on diabetes written by a student or intern, announced on page 338 of this issue.

The Journal, started in the current year, is still our newest venture of major importance. In this early stage of its existence, members of the Association are invited to submit constructive criticisms. Contributions will also be welcomed by the Editorial Board.

Suggestions and comments are also invited in regard to other phases of the Association's activities. Let us all work together to make this thirteenth year of the Association a year of good fortune and continued progress.

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