

investigations attempt to bridge. Thus, for example, the professional man in medicine may be supplied with new drugs, improved methods, and more effective instruments for the control of disease as a result of researches in such subjects as physics and chemistry, which to the layman would appear to have little or no connection with the practice of medicine. In fundamental researches of this kind the universities are particularly active. Reference to this type of research is made below in connection with the discussion of medical research, some of which is carried on in universities and some in institutions such as hospitals and sanatoria, and some co-operatively in all these types of institutions.

Researches in all the fundamental sciences carried on in Canadian universities cover such a wide field that only a few examples can be quoted here. In the biological sciences, studies in classification of types of animal and plant life are carried on. These are of interest not only to the taxonomist but also to many scientific workers in other fields of endeavour. Thus workers in cytology, who deal with the structure and functions of the cells that make up the living organism, and those in genetics, who deal with the laws of inheritance, are continually building on the work of those who have made classifications of various kinds of living things. Therefore, in the practical application of genetics, plant and animal breeders who develop new types of plants or new breeds of live stock are indirectly indebted to the taxonomist. A university researcher dealing with the classification or habits of growth of fungi may appear to be working on a subject of no practical importance. But it must be remembered that many of the most important plant diseases, including rust and smut, are caused by fungi. The knowledge gained by the mycologist, or student of the fungi, is used by the plant pathologist, who is interested in controlling plant disease, and also by the plant breeder, who wishes to develop varieties of crops whose yield and quality will not be affected by disease. It is clear, therefore, that many obscure studies may have the greatest practical importance. In the production of plants and animals for all sorts of purposes the facts obtained in such fundamental researches are in constant use. In making such information available, not only with regard to living things but in the field of the inanimate as well, scientists in university laboratories continue to serve the country effectively, if unobtrusively.

The above examples of fundamental research as applied to biological problems have been mentioned in order to indicate the connection between the laboratory and the problems of practical everyday life. Many similar examples could be quoted in the fields of physics and chemistry. Within a short space of time remarkable technical advances have been made and automobiles, aeroplanes, and radios are the concrete evidence of progress. But there is a tendency to take these things for granted and little attempt to understand why they are available now, when they were not available forty years ago. The material from which they were constructed and the sources of the power for the factories were available, but their possibilities were not understood until research workers in their laboratories elicited fact after fact, and added these to the knowledge gained by their predecessors to build up a unified body of knowledge in one field after another. This knowledge was taken in hand by engineers, chemists, and others who were often more closely in contact with industry than the research worker himself, and applied to problems of production. The ordinary citizen reaps the benefit in the form of modern improvements. But