ADV. 13·7·29

THE DEVELOPMENT OF SOUTH AUSTRALIA

A GEOGRAPHICAL STUDY

In yesterday's issue we published a "Prosperity Graph" of South Australia, from 1836 to 1927, which formed portion of a scientific paper read by Dr. Charles Fenner on Thursday evening, at a meeting of the Royal Society of South Australia. The paper itself dealt with a wide variety of factors, which influenced the growth and development of South Australia, and was a lengthy one. It was illustrated, throughout by maps and graphs, showing the correlation between the geographical conditions of rocks, soils, climate, rainfall, coastline, topography, on the one hand, and water supply, agricultural, and pastoral production, irrigation, transport, and so on, on the other hand. In the section entitled "Education, Research, and Invention," Dr. Fenner writes as follows:—

Throughout the whole of the 90 years reviewed and discussed here, which have embraced the total period of the colonisation and development of South Australia, the story is one of a steady, persistent, and increasing process of adaptation to environment. In the beginning, a population drawn from the advanced culture of England, from commercial rather than from agricultural centres, bred in an environment of abundant rains and cold winters, and used to the traditions and customs of an agricultural and pastoral practice, that had grown up under those conditions, was transplanted to the antipodes, far away from any centres of population, where "commerce" was as yet unborn, where the topographic and plant conditions were totally strange and unknown, and where the climatic, soil, and market conditions demanded an agricultural and pastoral practice quite unlike anything they had previously known. To these settlers there was later added another foreign and untried element in the German religious refugees of the forties; while there has been throughout the whole period a further continuous though fluctuating addition from the original home islands of Great Britain and Ireland. The remarkable success that has been achieved by these people and their native-born successors may be regarded as having been accomplished in two ways.

Throughout there has been a persistent and tenacious "will to succeed," and success has been brought about by :—

(I.) The mass effort of individual farmers, pastoralists, and others—men of shrewd and open minds—ever trying new methods, adopting those that were successful, copying from and being copied by their neighbors; this movement is represented to-day, in a somewhat wider sense, by the agricultural bureaus and other educational facilities that are encouraged and organised by the Department of Agriculture.

(II.) In addition there have been wiser men, men with a broader education or a deeper insight, who have been inspired to invent new types of implements, to adopt new methods of treating the soil, to breed more valuable and better adapted types of both animals and plants, and to make such other important adjustments of agricultural and pastoral practice as have grown into the present general and progressive methods used.

It is not possible to separate these two influences, but the growth of the latter type has manifested itself from time to time in the establishment of definite educational and research institutes. In 1885, notwithstanding the depression that then existed, the Roseworthy Agricultural College was established, and in 1924 under conditions of high prosperity, stimulated by a belief in the value of scientific research and aided by wise bequests, the Waite Agricultural Research Institute was founded. A further fact, and one of considerable importance, is the extended use made by the State of trained and selected scientific and engineering authorities for administrative work. This we see in the departmental heads and special officers in agriculture, mines, water supply, railways, roads, harbors, forests, education, irrigation, chemistry, architecture, and so forth.

Throughout the history of the State, there has been a steady, wholesome, widespread demand for education generally. In 1875, when adverse conditions of low metal prices and low wheat yields had caused a period of depression from which the State was just then emerging, the first important State Education Act was passed; the total population was then about 200,000. In 1892, again a time of depression and unemployment, primary education was made free to all. In 1876, during a prosperous cycle, but with the effects of the closing of the Burra and Kapunda copper mines still in operation, the Adelaide University was founded, and it has grown and has rendered profound and incalculable service to the State. In 1915, an Education Act that provided for great extensions of free education was passed, and following on that Act we have seen during the past decade a period of exceptional prosperity, a remarkable extension of modern educational facilities closely adapted to the requirements of the people.

The factor of general and special education, as outlined in this section, has played a great part in the adjustment that has taken place, enabling farmers, graziers, vignerons, fruitgrowers, dairymen, and others, under the conditions prevailing in different regions of the State, to adjust themselves to their varied and varying environments.

Of outstanding importance among the "inventions" were those that enabled man to make better and more immediate use of the light scrub-covered mallee soils, for example, "Mullenising," the stump-jump plough, and the stripper. There is also the outstanding fact of the adoption of the use of artificial manures, mainly superphosphates, and the development of a local technique in the application of same to these phosphate-hungry soils; the practice of better methods of tillage and rotation of crops or fallow; the breeding or the introduction of drought-resisting or other special varieties of wheat or other cereals, the breeding of stock more suitable to local conditions or more in demand in the markets; the struggle against plant and animal diseases and pests in farm, orchard, and vineyard; the fight against "seepage" and other difficulties in the irrigated areas; the march of mechanical invention in providing improved transport and communications, and so on. In all these matters, the assistance of specially selected men, highly trained in the knowledge and skill required by such investigations, has been required, and has been available. The influence of such factors on population movements has mostly been general, but in some cases the incidence has been specially marked, as has been shown in other sections.

The concluding section of Dr. Fenner's work contains various suggestions that arise from a study of the method in which the development of the State has proceeded during the past ninety years. The author thus concludes:—

While this paper is purely a geographical study of the growth and movement of the population of South Australia, as determined by the environmental conditions, and varied by man's reaction to those conditions, it is inevitable that the intensive study of the various tendencies that have operated during the life of the State should suggest "direction marks" regarding the future. Without departing from the strict line of unbiassed scientific research, it is thus permissable to set down some suggestions regarding the future, it being understood that such suggestions (which are not new) are re-stated purely from the geographical point of view, with the added emphasis provided by the evidence that has been collected and presented here. They are as follow:—

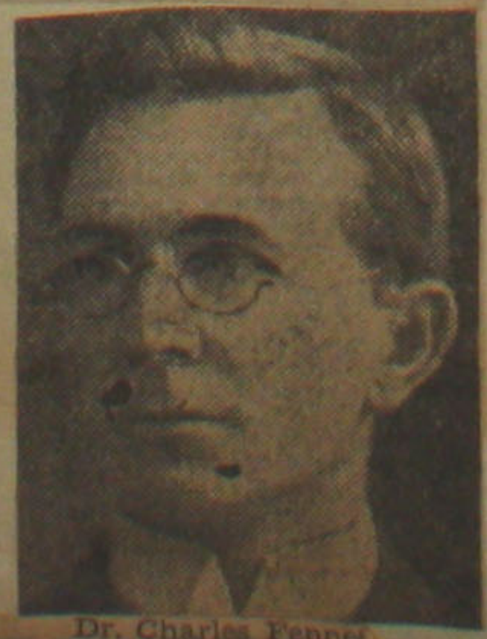
1. The foundation of a stable and growing population is a steady birth rate; the ebb and flow of immigration is on the whole automatically governed by those environmental factors that determine general prosperous or adverse conditions.

2. Within the southern division of the State, i.e., "The Counties," periods of depression will recur, as dry seasons most certainly will; but the tendency is for these to press less and less heavily, in proportion to the continued adoption of the sound methods and thrifty habits that have developed under our special geographical conditions.

3. In the endeavor to co-operate with the geographical environments of the various regions of the State, and to combat the adverse influences, there is required further concentration towards—(a) plant, animal, topographical, and soil research; (b) the preparation of maps of all forms of State resources; and (c) the widespread dissemination, by education, of scientific, engineering, and agricultural knowledge and skill.

4. Beyond "The Counties," in the purely pastoral regions north of the 10-inch line of rainfall, where droughts are more frequent, the decimating effects of dry seasons on the flocks and herds may be somewhat ameliorated by an avoidance of over-stocking and consequent over-feeding. Apart from minerals, the chief wealth of this great area is its mantle of native vegetation, the existence of which is at present in peril.

5. Agricultural settlement has reached its northern limits, and these limits are on the whole well within the boundaries of "The Counties;" future efforts should be devoted to the occupation of areas yet unoccupied within the counties, and to the more intense utilisation of well-watered land that is already under occupation.



Dr. Charles Fenner