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CHAPTER I

INTRODUCTION

There has been an unexpected advancement in the field of science since the time of the first 'Sputnik' was put into orbit. Countries that were already advanced in the field of science - theoretical as well as applied - were geared into action to such an extent the like of which they had never experienced.

P.S.S.C. programme, Chem. programme, B.S.S.C. programme and a programme in the field of Mathematics came into existence in U.S.A. In India, the impact of this scientific feat resulted into setting up of a special department of Science Education in the National Council of Educational Research and Training. In the year 1961, the National Council of Educational Research and Training began to prepare a blue-print of a 'National Science Talent Search Project'. It was during this year 1961 that the present investigator thought of making his own modest contribution to this national effort for science Talent Search.
The idea of the present problem owes its genesis to the stir that came in the world of scientists with the entrance of the 'Sputnik'. A new test was visualized - one more addition to a number of tests lying unused in the country. A question may rightly be put; "Is it worthwhile to prepare a new test when the educational development in the country has not reached a stage when tests could be scientifically used by schools, guidance workers and counsellors? This thinking may appear quite rational. But the issue remains: "should not the educationists have a forward look?"

When Dr. Long compiled the 'Mental Measurement Hand Book of India, 1962', it was this 'forward look' of an educationist that must have impelled him to take up the task. When the experts like Dr. B. Bloom, Dr. Fletcher and Dr. W. Hill were designing the examination improvement programmes in India, again it was this 'forward look of an educationist' that was the same of inspiration to them. When the National Council of Educational Research and Training thought of the 'science talent project', it was this 'forward look' of National educational leadership that was at the root of this project. Thus, the educationist has to have a 'forward look'. The present work is an attempt of the investigator to look ahead to provide a tool for future educationists who would have reached a stage of using scientifically the tools of guidance and selection.
As already discussed above, recent international events have focused attention upon the urgent need for early identification of exceptional science talent. At this stage, when science is acquiring increasing importance in the world, it is of utmost importance to tap every source at all stages of education and to locate and foster scientific talent so that it makes a positive contribution to the nation's scientific status.

The programme of locating science talent focuses our attention primarily on the science colleges from where such talents can be available. No doubt, science colleges are increasing rapidly in quantity to meet the great demand of the nation. But it is a fact that these colleges are often crowded with mediocre students or students who have no real aptitude for science - a situation which is unfair for the institution and the student both and ultimately for the nation. This situation results in a tremendous wastage at a very important stage of higher education.

The University Grants Commission in its third report has called for efforts to prevent the tremendous wastage that now takes place at various levels of our system of education. In the report, the commission has further stated that, "The University should not be treated as some kind of waiting room in which young men and women
are collected before entering upon a wage-earning career." The Commission has also stressed the need of an acceptable test for screening the admissions to universities.

In the present situation, it has been quite apparent that of students entering science colleges, the proportion who fails to complete the courses of studies is notably high. The main reason of this is that most of the science courses demand of the students, superior endowment of scientific aptitude. If this aptitude be measured in advance of its training, the above-mentioned wastage can be avoided to a great extent, by way of eliminating those who are not likely to make good grades and by admitting only those whose chances are high.

On the contrary, there are also some best high school students who, for one reason or other fail to enter the college in spite of possessing first-rate ability for science course. According to Charles Cole, "The failure of these students to go on to college constitutes one of the more serious ways in which the nation wastes its intellectual resources." 1 It is generally found that most of the above students are unable to join college owing to lack of financial support. Hence the use of scholarship aid, to encourage able individuals to continue their education is increasing in popularity.

The administration of scholarship programmes in the past has been varied and in some cases open to criticism. It is an established fact that scholarships should be awarded only to the deserving pupils having good science talent. Hence, the selection of the scholarship winners should be made objectively on the basis of scientific aptitude of the pupils.

Thus, it can be concluded that to check up the loss of science talents, all the high school students with high scientific aptitude should be encouraged to join the science courses and no student with low scientific aptitude should be admitted to such courses. This situation demands the need of any good scientific Aptitude Test. The most important stage to locate and foster scientific talent is the secondary education stage because the biggest loss of science talent mostly occurs at the transition point between the high school and the college.

The present work relates to constructing and standardizing a test to measure scientific aptitude of the pupils at the end of the secondary education stage with the hope of providing the necessary tool to locate and foster the science talent at that stage.