INTRODUCTION

A limited number of studies of the implementation of the Victorian primary school Science programme over the last decade have been undertaken. Symington and Hawkins (1972) surveyed 147 teachers in suburban schools near Toorak Teachers' College. They concluded that '... a secondary school background does not appear to have any effect upon the time the teacher devotes to science, or the extent that class topics arise from the teacher's own background' (p. 4).

In a similar study of both State and non-State primary school teachers from the Geelong and Corio inspectorates of Victoria, Henry (1977) reported a decline in the amount of science being taught.

Colbourne and Brockley (1980) surveyed a sample of teachers who subscribed to the Bendigo C.A.E. weekly Science Programmes and Resources Units in 1979. However, care should be exercised when considering their claim such as 'the downward trend (in amount of science being taught) found by Henry (1977) has been reversed'.

White, Raun and Butts (1967) had found a lack of interest in Science by teachers in the United States to be a major contributing factor to the limited occurrence of Science in the elementary school curriculum. Conant (1974) reported that in Portland, Oregon, the average time spent on Science in elementary schools was as low as two minutes per day. Spooner and Simpson (1979) have argued that 'teachers who "like" Science or "feel it is as important" find time to include this subject in their busy schedules' (p. 415).

The proposal that an attitude towards Science is important in whether or not teachers include Science in the curriculum would then appear worthy of consideration. A measurement of scientific attitude was therefore sought.

THE STUDY

The current study, as well as replicating aspects of the three previous Victorian studies, introduces a measurement of Scientific Attitude. On this occasion, the target is the Victorian Catholic primary school system, a system which in 1981 provided for the education of nearly 100,000 students. This represents over 20% of the number of students who were enrolled in primary schools in Victoria (ABS; 1982).

The Instrument
In addition to a series of items which were similar to those of the previous studies, questions to determine teachers' familiarity with a range of 'standard' Science curriculum packages were included in the questionnaire, as well as a twenty item attitude inventory in the form of a Likert-type scale and a final open section for any other comments.
The Attitude Scale
In addition to those measurements of scientific attitude referred to above, a range of other instruments was examined, but ultimately the scale chosen for this study was a modified form of that devised by Spooner and Simpson (1979). This is a measure of attitude towards Science rather than a measure of the scientific attitude.

The instrument was based on the 'Surveys of Opinions toward Elementary School Science Scale', which had been developed by 'an expert panel' of Science educators and educational research specialists. A twenty item Likert-type scale was constructed with the statements focusing on common attitudes of teachers towards Science as well as the important goals and characteristics of the Science Curriculum Improvement Study (1976), and other features of method and goals as seen appropriate by the 'expert panel'. Certain words and expressions were changed to suit the Australian context of the present study.

The scale allowed for five possible responses in each case ('Strongly Agree', 'Agree', 'Undecided', 'Disagree', 'Strongly Disagree') with scores of 5, 4, 3, 2 or 1 respectively being given for the responses. In the cases of items 1, 2, 4, 10 and 18, these scores were reversed. The maximum score on the scale would then be 100 and the minimum 20. A score of 60 was taken as indicating neutral feelings; below 40 indicating negative attitude, and above 80 indicating positive attitude (Spooner and Simpson, 1979, 418).

The attitude scale was administered as an integral part of the total questionnaire to all of the full-time teachers in a random sample of 33 Victorian Catholic Primary Schools.

RESULTS AND DISCUSSION

272 completed questionnaires were returned. This represents 66% of the full-time teachers in the 33 selected schools.

I  A brief comment on the comparison of findings with those of the previous studies

At this stage of analysis, the current study would tend to indicate that compared with the state system, the Catholic schools appear to have a slightly higher proportion of less experienced teachers, and a very much lower proportion of male teachers working in them. An increase in the secondary school science background of teachers, as well as the science component of teacher education courses and attendance at science related in-service programmes over the decade has been detected, but this has not been translated to more science being taught in the school. On the contrary, a progressive decrease in the average amount of class time spent on science has been observed. These findings will be reported in some detail elsewhere.

II  The Attitude Scale

The lowest score in the sample was 60, the median was 74, the mean was 75.5 and the highest score, a very high 96. Twenty-five percent of respondents had scores of 80 or above, which Spooner and Simpson have described as representing very positive attitudes to Science. Whilst the mean of 75.5 indicates a positive attitude towards science, it is lower than the 79.8 found by Spooner and Simpson for their American sample's pre-test (1979, 418). One could speculate about the reasons for these high attitude scores, and the minor discrepancy between the American and the Australian samples, but such speculation would fall outside the scope of this paper.