

quite different. In Australian universities, students enter as candidates for the ordinary degree and are admitted to honours courses on the basis of superior performance in the first 3 yr. Honours requires an additional year. Of the total male science entry for 1963, nineteen completed 4 yr honours degrees in 1966. Fifteen of these nineteen were included in the thirty-eight men with whom this communication is concerned, scarcely surprising in view of the fact that the thirty-eight men were selected on the basis of superior matriculation performance. No fewer than eleven of these fifteen were divergers, only four were convergers. Thus although academic performance at matriculation and first year levels had not differed, markedly dissimilar numbers of the two groups had gone on to honours. The proportions differ significantly from those which would be obtained if there were a chance relationship between convergence/divergence and the taking of honours (χ^2 , 5.09; degrees of freedom, 1; $P < 0.025$).

The distribution of honours students by departments is also interesting. Convergers receiving honours were confined to mathematics (two), physical chemistry and physics. On the other hand, divergers received honours in mathematics (five), physical chemistry, biochemistry, physics, geology, biology and zoology. Of the total of

³ Cropley, A. J., *Alta. J. Educ. Res.*, **12**, 51 (1967).

⁴ Cline, V. B., Richards, J. M., and Needham, W. E., *J. Appl. Psychol.*, **42**, 184 (1963).

⁵ Terman, L. M., *Genetic Studies of Genius* (Stanford University Press, Stanford, 1925).

⁶ Hudson, L., *Nature*, **198**, 913 (1963).

⁷ Guilford, J. P., *Amer. Psychologist*, **5**, 444 (1950).

⁸ Torrance, E. P., *Guiding Creative Talent* (Prentice Hall, Englewood Cliffs, 1962).

GENERAL

Microbarograph Record of Waves from the Chinese Thermonuclear Explosion on June 17, 1967

An unusual train of waves, characteristic of a distant and violent disturbance of the atmosphere, began to be received on a microbarograph¹ in Aberdeen at about 0545 h G.M.T. on June 17, 1967. The unusual train, which lasted about an hour, was superimposed on a much longer and more usual series of waves of period about 12 min and amplitude 250 microbars; such waves, which are of natural origin, are characteristically received during meteorological inversions.

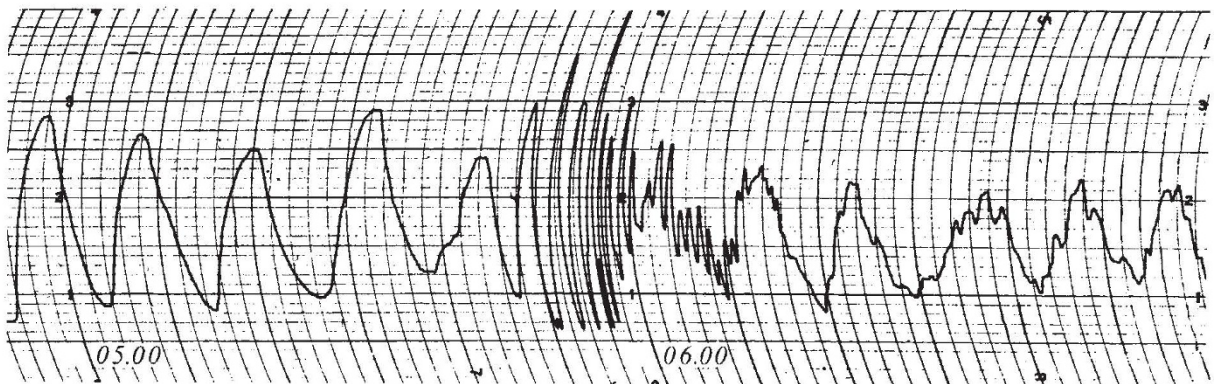


Fig. 1. Microbarograph record of waves from the first Chinese thermonuclear explosion taken at Aberdeen 0500-0700 h G.M.T., June 17, 1967. Full scale deflexion is roughly 270 microbars for waves with a period of 2-4 min.

nineteen honours degrees awarded in 1966, eight were with first-class honours. Seven out of these eight went to the sub-group of thirty-eight, so that only one man who was not in the highest scorers at matriculation level obtained first-class honours in science 4 yr later. Five of the seven firsts went to divergers. In the case of mathematics, three out of four firsts went to divergers.

Although these results are clearly of limited general application because of the small number of students involved, they are interesting in that they do not agree with findings for British sixth form schoolboys². Furthermore, they also suggest that later years of undergraduate study, and especially the honours year, may give students more opportunities to utilize divergent thinking skills, although it is doubtful if any undergraduate course affords many such opportunities.

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A. J. CROPLEY

Department of Psychology,
University of New England,
Armidale,
New South Wales.

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¹ Hudson, L., *Contrary Imaginations* (Methuen, London, 1966).

² Gibson, J., and Light, P., *Nature*, **213**, 4415 (1967).

The unusual train is likely to have arisen from the first Chinese thermonuclear explosion, announced some hours later. Two small disturbances on a vertical seismograph were also recorded at Aberdeen at 0050 and 0147 h G.M.T. on the same day. If the earlier of these disturbances originated from the explosion, the range was about 4,000 miles, which is consistent with an origin in Western China. The peak-to-peak amplitude at Aberdeen (where I am indebted for the calibration and maintenance of the microbarograph to Mr T. P. Gill) of the largest atmospheric waves from the bomb was about 270 microbars. This may be compared with amplitudes at Aberdeen of 350 microbars and 1,000 microbars for the Russian explosions of 25 and 50+ megatons TNT equivalent over Novaya Zemlya on October 23 and October 30, 1961. Because the Chinese explosion was at roughly twice the range of Novaya Zemlya it thus appears to have been equivalent to that of between 20 and 30 megatons TNT. This figure is consistent with the 1.5 min period of the largest waves in the train².

R. V. JONES

Department of Natural Philosophy,
University of Aberdeen.

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¹ Jones, R. V., and Forbes, S. T., *J. Sci. Instr.*, **39**, 420 (1962).

² Hunt, J. N., Palmer, R., and Penney, W., *Phil. Trans. Roy. Soc., A*, **252**, 275 (1960).