nial celebration of the American Museum of Natural History, she was awarded its gold medal for distinguished achievement in science. This was her last official visit to the museum.

With the publication of volume VI of *The Invertebrates*, Dr Hyman's monumental contribution was completed. No one person can carry on her project, but the publishers intend to continue the series with each major group handled by a different author. The preface of her last volume concludes with the words "I now retire from the field, satisfied that I have accomplished my original purpose—to stimulate the study of invertebrates".

Correspondence

Identification of Concealed Randomized Objects

SIR,—Our first comments[1] on earlier responses to our communication[2] seemed to us adequate, and ordinarily we would have left the matter there. Since then, however, Robertson and Fienberg[3] and Hansel[4,5] have made other points on which we would now like to comment.

In the first place, limitations of space prevented us from including in our communication all the details of the experiments, so that Hansel is correct in stating that our communication did not present all the data that were used in calculating the overall probability $P < 10^{-50}$. Contrary to the assumption of Robertson and Fienberg, our communication dealt not with a single experiment but reviewed a series of experiments in which the same materials and basic procedure were used. That we chose to review all results obtained under these conditions did not involve "optional stopping", since we did not exclude any experiment with similar conditions.

The results clearly did not depend on the reductions made in the number of target objects, since our table shows that significant results were obtained in the series with sets of ten, eight and four covers. Nor was there any general improvement in the discrimination of cover 15/16 as the size of the sets was reduced.

The proposal that Stepanek's discrimination depended on olfactory stimuli emanating from one cover cannot explain the fact, as stated in our communication, that the subject was sometimes able to discriminate between the two sides of the same object. It is also excluded in those earlier (and numerous) experiments in which Stepanek discriminated the white from the green side of the cards, which has also been explicitly shown not to depend on warping[6]. Or is it seriously proposed that one side only of the objects or cards carried the odour and that this was discriminated ?

In general, Stepanek has not achieved significantly high scores when he is completely separated from the target materials. (He was, however, successful in a recent experiment in Charlottesville in which he saw, but did not touch, the outside containers.) He does not refuse to experiment under these conditions, but we have gained the impression that, like many other sensitives, he has come to favour a particular set of conditions for working. This is equally true for many other kinds of behaviour not belonging in parapsychology, and we believe that Stepanek's lower scores in other conditions similarly result from psychological inhibitions setting in when his habitual style of working is changed. We are in the process of testing this hypothesis further while continuing efforts to train him to respond successfully to target materials when completely isolated from them.

Robertson and Fienberg object to the fact that the covers were exposed to the subject's vision in the first three series we reported in our communication. We made it quite explicit that the ESP targets during that stage were concealed cards and that we did not regard the responses to the exposed covers in these series as evidence of extrasensory perception. Our main point, as clearly stated, was that the subject had apparently learned to discriminate the covers in sensory conditions and had then continued this discrimination by extrasensory perception when these objects were effectively concealed from his vision or any other ordinary sensory pathway.

Our communication cited the data for one outstanding test object (cover 15/16) as an illustration only. We have elsewhere, however, regularly analysed the results for all the targets within each series, and we have recently correlated responses to identical targets between series in conditions both of sensory exposure and of concealment. This analysis shows a high correlation between the subject's tendencies to call the same targets "white" when visible to him and when concealed.

Robertson and Fienberg propose a different method of statistical analysis, and we make no objection. We only wish to point out that the process of randomization used made the targets of different runs independent of each other, and the possibility of inference based on feedback from preceding runs was excluded. Of course, the calls within a particular run were not independent of each other, but this fact was statistically conservative in its effect.

In summary, we think many of the objections raised against this research have already been met in longer publications[7,8] or even by a careful reading of our brief communication. The work with Stepanek has not thus far provided an experimental demonstration of extrasensory perception that is invariably repeatable. He has his "off days", and the conditions in which his capacity manifests seem to have rather narrow limits. Nevertheless, considering the large number of independent investigators with whom Stepanek has demonstrated highly significant performance under rigorous and varying conditions[9], he has come closer than any previous subject to providing a predictable demonstration of extrasensory perception under experimental conditions of control. Contrary to Hansel's statement, Stepanek has succeeded after the publication of numerous reports on his successful ESP performance.

Yours faithfully,

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Proposed New Unit of Frequency

SIR,—I propose the establishment of a new intermediate unit of frequency—pitts. The pitts equals "pulses per second", "nerve pulses per second" or "spikes per second", all relatively clumsy terms used indeterminantly by neurophysiologists, brain research workers and others.

The proposed new unit honours the late Walter Pitts, colleague of the late Warren McCulloch. Pitts and McCulloch, then at the University of Illinois Medical Center in Chicago, published a brilliant series of papers in the *Bulletin of Mathematical Biophysics* during the forties[1-3] which laid the foundation for the treatment of central nervous system physiology as information processing within networks of "formal neurones", now called