used some work which we did collaboratively with Drs. Clark and Rubin as an example of a research strategy rather than studies of any substantive significance. It is our feeling (*2*) that "induction"-like phenomenon relevant to the brain must involve studies of the brain itself (*3*).

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30 June 1969

Water Generated Earth Vibrations

At Ringwood, New Jersey, the Ringwood Creek passes over a vertical masonry dam, approximately 20 m long by 5 m high, producing a strong beat at flood time (about 10 hz) enough to rattle buildings nearby, and often to be heard plainly a half mile downstream.

According to Rinehart [*Science* **164**, 1513 (1969)] we ought to expect another frequency around 50 hz. Such a note, if present, must however be of low amplitude, too small to be heard above the general din without instrumentation. Apparently a separate explanation is needed for the above-mentioned low-frequency pulses which we plainly see as well as hear.

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1 July 1969

Structurally, a dam is quite different from a waterfall. The 10-hz vibration might be associated with the length of the dam rather than with its height.

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22 July 1969

Genetics of Memory

Bovet *et al.* (*1*) have suggested a difference in memory mechanisms between DBA/2J and C3H/HeJ strain mice, based upon a variety of learning paradigms. They observed that DBA/2J mice were superior to the related C3H/HeJ in the acquisition and retention of an active avoidance task, and that they performed differently in a passive avoidance situation. They suggested that their findings supported the notion of a short-term memory peculiar to the C3H/HeJ strain and that the DBA/2J mice have long-term memory storage.

We wish to propose an alternative mechanism whereby these differences can be explained. The C3H/HeJ is one of several strains (including the CBA/J) which exhibits defective vision resulting from a mutation on chromosome XVII. These homozygous recessive *rd* (retinal degeneration) genes are associated with a progressive degeneration of the rods which subserve the function of visual receptors (*2*). Since Bovet *et al.* used light as the conditioned stimulus for the avoidance task, it is not surprising that the C3H/HeJ mice exhibited poorer learning. Both the active and passive tests provided a wealth of visual cues which were probably utilized exclusively by the DBA/2J. The C3H/HeJ mice may have depended upon tactile or temporal cues. They could have shuttled back and forth in the avoidance box at some interval which minimized punishment. Retention of this temporal pattern would probably have been more difficult than retention of a visual conditioned stimulus and could explain the deficits in performance with the longer intersession intervals. In like manner, the visually defective C3H/HeJ mice may not have recognized the passive avoidance device when they were retested after a delay of 45 minutes or more [see figure 9 in (*1*)].

This mechanism may not explain all the differences observed by Bovet *et al.* Other neurological disturbances may accompany the retinal degeneration and provide more direct evidence for their theory. Nonetheless, we feel that an experiment which controls for visual differences should be performed to resolve this question. The shuttle avoidance task performed in complete darkness with an auditory conditioned stimulus should reveal no difference between the two strains if visual cues are the only crucial factors involved. If the results are essentially the same as in their earlier studies, they will have eliminated a confounding variable and strengthened their argument.

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31 January 1969

Concerning the possible role of genetic abnormalities in vision in determining the memory patterns of some C3H sublines (*1*), we have found that comparable levels of avoidance responding were elicited when we adopted auditive stimuli rather than light. The same difference between DBA/2J and C3H/HeJ mice was evident when a delay conditioned stimulus consisting of a 3000-hz tone was adopted in that distribution of practice improved the performance of the former strain while it impaired the performance of the latter (*2*).

Further, comparable levels of transfer were attained when C3H/HeJ mice were shifted from light to tone as from tone to light (*3*).

Further researches conducted with the same strain of mice (C3H/HeJ) demonstrated that it was possible to reach high levels of performance in a five-choice discrimination task when sets of patterns differing by their spatial orientation were adopted (*4*).

With regard to the suggestion of the possible role of temporal cues, the experiments we have designed in order to test this hypothesis have until now brought only negative results.

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