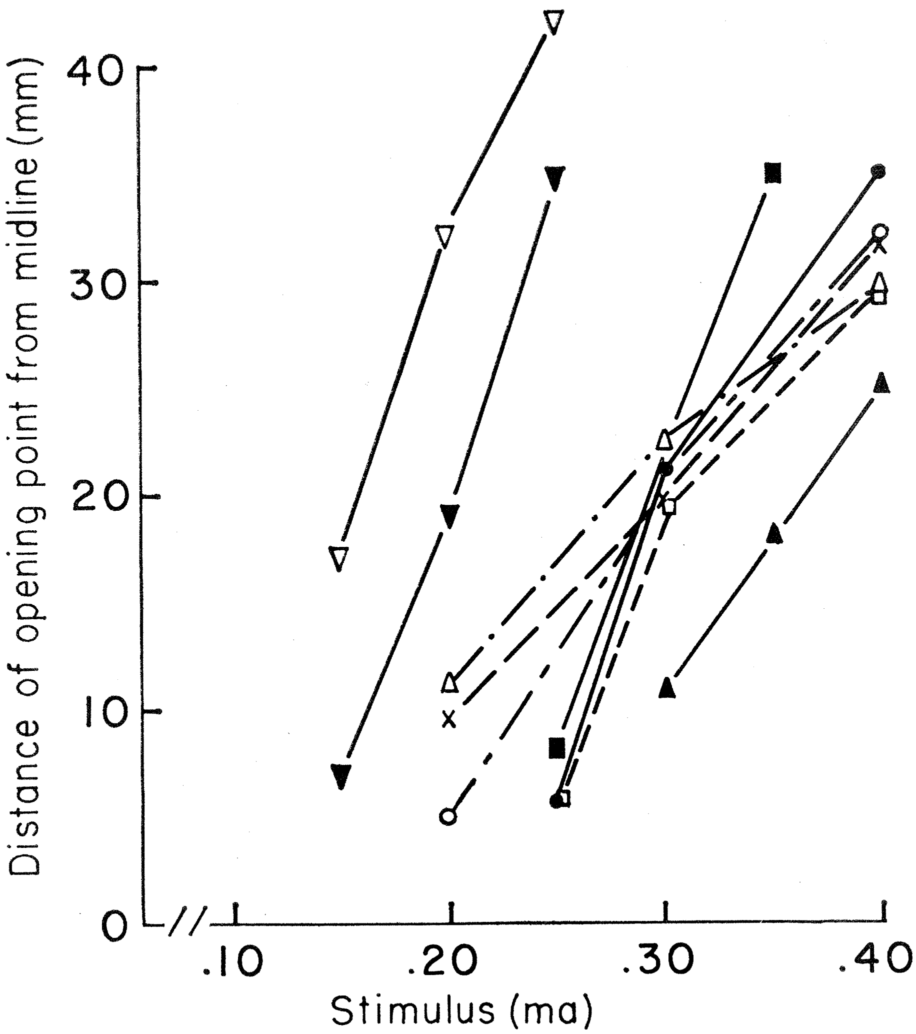

Fig. 2. Extent of sensory fields for jaw-opening, as determined by intensity of stimulation. The data are from eight different cats, and all but one (the solid circles) of the curves represent the maxillary lip-line field. Each point is the mean of ten trials.

tics, is thought to limit the availability of a particular response to narrow bands of stimulus spectra (*2*). Entire sensory modes have been interpreted as being damped by active mechanisms in achieving a focus of perception (*3*).

The data presented here suggest a rather different manner of achieving what is, in effect, selective perception. During central stimulation a certain response (for example, jaw-opening) becomes available through peripheral stimulation of a limited sensory field which, prior to central stimulation, had been inoperative. This is an active mechanism and does not proceed through sensory exclusion. The field is unspecific with respect to the relevant sensory mode: any object making contact with the effective sensory field triggers the response. The sensory field itself is limited; but, within the bounds illustrated in Fig. 1, the greater the hypothalamic activity, the more inclusive the effective sensory field. The specific events described in this paper constitute a highly adaptive mechanism for an aroused, attacking animal.

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Pesticide Residues in Total Diet Samples: Bromine Content

Duggan, Barry, and Johnson provide interesting data on pesticide residues in total diet samples in food ready for consumption [*Science* **151**, 101 (1966)]. Most of the analytical procedures are specific for the pesticide or group of pesticides; but in the case of bromine and arsenic the analytical procedures determine the total amount of the element present, and the figure so obtained is not necessarily related to a pesticide containing one of these elements. It is true that the high concentrations of bromide ion in grain can often be associated with use of methyl bromide or ethylene bromide fumigants, but this association is probably not true of all the other diet components named by the authors.

Bromides occur naturally in sea water and soils; some soils contain appreciable amounts—for example, the tidewater area of Virginia contains 10 to 20 parts per million. It is not surprising that some of this bromine is taken up by plants or that natural bromine, usually in the range 0.5 to 10 ppm, is found in the edible portion of the plants. Part of the bromine is conveyed in the food chain to animals, and up to 8 ppm can occur in milk [G. E. Lynn, S. A. Schrader, O. H. Hammer, C. A. Lassiter, *J. Agr. Food Chem.* **11**, 87 (1963)].

Interest in the herbicide bromoxynil, 3,5-dibromo-4-hydroxybenzonitrile, containing over 50 percent bromine, and in its octanoyl ester, has led me to study the bromine levels in grain from treated plants. Control samples, which have received no treatment with a pesticide containing bromine, have a natural bromine content that varies with the location of the site but has ranged from 0.5 to 25 ppm. Clearly it would be incorrect to relate this natural bromine content to bromoxynil, or, for that matter, to any other pesticide containing bromine. I therefore suggest that, when Duggan *et al.* list bromide-ion levels as derived from pesticides, this classification could have unwarranted implications.

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