ponents: *"No one* has demonstrated that phase *does not* influence quality of tone. Special apparatus permitted us a continuous change of phase with independent control of intensity and frequency. . . . For each cyclic phase shift, the sensation components vary in loudness. . . . The results are inconsistent with resonance analysis."

If filters could filter out "sensations," one could change a sung bass note into a soprano. G. O. Russell[4] tried it: "Filters cutting out frequencies below 500—but oddly enough, observers still do not hear it as changed to a feminine voice; yet the lowest physical frequency still present is well up in that range."

Let us repeat our warning. Electric filters do not filter out sensations. They physically destroy "Fourier Components." It is true, in ninety (or more) cases out of a hundred the sensations are also gone. But the exceptions, the sensations unexpectedly remaining, are of far greater importance for acoustical science, for they prove that *the cochlea, while being the analyzer, is not a Fourier analyzer*[5].

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A SOURCE OF STUDY MATERIAL FOR THE COUNTRY MAMMALOGIST

WHILE engaged in an investigation on the food and feeding habits of New York fur-bearers during the past few years, the writer has come into contact with a number of trappers and fur buyers. Acquaintance with these men has made it possible to secure for study large numbers of the carcasses of skunk, weasel, mink, raccoon and fox.

Many of these fur buyers travel about their respective counties, buying furs, a good proportion of which are in the form of unskinned animals. These are brought to the buyers' headquarters, where they are skinned, and by previous arrangement with the writer the carcasses are saved. Trips are made every few days to these localities, the viscera removed, weights taken of unskinned animals and further notes made. During freezing weather, visits are made once a week. That a great deal of material can thus be secured is attested by the fact that one buyer of the writer's acquaintance handled over fifteen hundred skunks during the past season (1931–32) as well as many hundreds of other animals. Approximately one half of these were received in an unskinned condition and the bodies made available for study.

Suggested topics for study other than that of food are:

(1) Weights. Sexual and age variation, likewise loss or gain of weight during the fall and winter season.

(2) Reproductive Cycle. The rutting season may be determined in some forms; the period of appearance of first litters, etc.

(3) Hibernation. By keeping data on weather conditions, and noting the number of animals caught over a wide period of time, the influence of temperature and precipitation may be partly determined as influencing factors in the date of hibernation, also the appearance of the animals from a state of winter sleep. For example, it has been noticed in the case of skunks, that the females are seldom caught during the cold weather of December and January, while the males may be tolerably abundant.

(4) The dates of full primeness in fur bearers, with data on color changes, such as weasels.

(5) The ratio of the sexes; do the males or the females appear most numerous?

(6) Abnormal animals. While this perhaps is not as important as the others, the fur buyers and trappers are always willing to hold out unusual specimens for the student to examine. Considerable data on freak forms may be revealed in this manner.

It has been found that advertising for stomachs and writing trappers of one's wishes is of little value. It is possible to supply them with tags and crocks, containing a 10 per cent. solution of formaldehyde, in which they might drop the viscera after skinning the animals. While this is not as satisfactory a method as examining the entire carcass, it has the advantage of saving one numerous trips and much time. The data might be faulty on such specimens.

Such material carefully studied will give one a working basis on which to submit suggestions for changes in existing game laws, where these appear at present unfavorable to the animal's natural increase and perpetuation.

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AMERICAN LINGUISTICS

IN SCIENCE of May 6, p. 491, Dr. Boas has noted that we may hope to learn most in regard to the history of American languages from a study of those stocks which have developed the greatest number of markedly distinct dialects. This has induced me to report briefly upon some of the results of my recent investigations of Cheyenne.

Cheyenne is a strongly divergent member of the Algonquian stock. It seems as if the transformation has been self-evolved and not due to extraneous influence. Thus, the number of even plausible Siouan loan-words is but a handful. On the other hand, I have a collection of more than seven hundred words and stems which are demonstrably Algonquian, even if these are but a fraction of the total vocabulary. It

[4] G. Oscar Russell, "Speech and Voice," p. 171. 1931.

[5] Max F. Meyer, "The Hydraulic Principles Governing the Function of the Cochlea." *Jour. Gen'l. Psychol.*, 1: pp. 239–265. 1928.