It seemed to pay no attention to flocks of ducks passing overhead. One day the owl was seen to fly erratically about a comparatively restricted area, making frequent swoops at something on the uneven surface of the sea ice. Examination of the area several hours later indicated that the Snowy Owl had either killed an injured female King Eider (*Somateria spectabilis*) or had harried it until it died from the combined effects of gunshot wounds and exertion. The owl had stripped most of the flesh from the carcass.

About a month after the above episode, and before the owl working over the ocean ice had moved inland, another Snowy Owl began a systematic patrol along a single-wire antenna that ran inland about a mile from one of the radio stations. A series of poles supported the wire about fifteen feet off the ground. Red Phalaropes (*Phalaropus fulicarius*) frequently flew from one small lake to another and in so doing often flew across the antenna. One or more of the phalaropes struck the tautly stretched wire daily, and a large percentage of these was killed or seriously injured. The owl slowly flew up and down the antenna, stopped at every pole for a short period, then proceeded to the next. The owl quickly devoured any phalarope injured badly enough to seriously impair its flight. I never saw the owl attempt to capture an uninjured phalarope.

During the spring and summer of 1952, when lemmings were numerous, I again saw Snowy Owls flying leisurely along the antenna, presumably to pick up crippled birds, but none was observed hunting injured ducks on the sea ice off shore.—IRA L. WIGGINS, *Arctic Research Laboratory, Point Barrow, Alaska.*

Analysis of the Call of the Whip-poor-will.—Tall (Audio Engin., 34 [Aug.]: 1950) has stated that "The human ear, when it is behaving normally, can understand, or perceive, an unrelated sound following another sound after a period of time approximately 0.14 seconds long." In examining a number of bird calls with an oscilloscope, very short pulses of sound with intervals less than this were observed. When bird calls contain pulses of a given frequency with short intervals between them, the impression gained is that of a metallic clatter or rasping sound. Some birds produce very rapid frequency modulation of a continuous call or signal with very rapid amplitude modulation. This gives the impression to the normal ear of separate notes, the intervals being low amplitude portions of the call.

Recently the authors examined a fine tape recording of the call of the Whip-poor-will (*Caprimulgus vociferus vociferus*) made by Mr. and Mrs. Jerry E. Stillwell during May and June, 1950, in Kentucky. These recordings were made on Minnesota Mining & Manufacturing tape no. 100. Some were at 15 inches per second and some at 7.5 inches per second. No appreciable difference between these was detected. When this recording is projected on an oscilloscope there are revealed pulses of sound, and modulation of both the frequency and amplitude which the ear did not approach interpreting with any degree of accuracy. The oscilloscope trace with its brief residual period permitted the eye to sense what the ear was incapable of. However, when the playback speeds are changed to one-half, one-fourth, or one-eighth of the original, an aural interpretation is gained which confirms the optical impression produced by the oscilloscope. There are three separate parts to the call. Generally only the third of these is audible as the *whip-poor-will*, though occasionally when one is close to the bird the second part is heard as a *chuck* preceding the third longer portion. The first note, visible on the oscilloscope and audible when the recording is played back at the slower speeds, is not normally heard because its amplitude is quite low, and its period of duration is so short that the ear does not detect its presence. According to Miller (Journ. Acoustical Soc. Amer., 20: 160–161): "When a

stimulus is presented the response is not immediate, but builds up over a period of time . . . . a brief stimulus must be more intense in order to appear equal to a longer stimulus."

The duration of these three pulses of sound and the intervals between them were studied. The first pulse is about 0.011 seconds long. During this time the frequency rises about two notes of an octave and drops about one note. After an interval of about 0.047 seconds, there is the second pulse of sound of about 0.092 seconds duration. This is modulated in two steps wherein the sound rises about two notes, drops one, and then rises about one note. After an interval of about 0.14 seconds, the third and final element of the bird's call is given. This begins at about a note lower than the previous, and is frequently modulated up the scale to about the sixth or seventh step, then drops off about three notes. This is approximately 0.67 seconds long. The time interval between calls is approximately 0.34 seconds.

It is difficult to interpret the aural response to the Whip-poor-will call. The word "whip-poor-will" spoken into an oscilloscope shows not even a remote resemblance to the trace produced by the bird's call. Cleaves (Auk, 62: 304–305, 1945) states that the Whip-poor-will says *purple-rib*. In general, the amplitude modulation coupled with the frequency modulation, and together with the preliminary pulses of sound over short intervals, establishes the characteristic of the call of this bird. Obviously the ear does not comprehend all of its elements, but gains an impression which is an ear-limited composite. The variation in the amplitude plays an important rôle in the psycho-acoustic affect on the human listener. The first note is of very short duration and is of an amplitude about a fifth of the greatest amplitude in the call. The greater portion of the second note has an amplitude which approaches the maximum for the whole call. The third portion of the call starts at an amplitude lower than the major part of the second note, increases rapidly toward the end, and then drops off rapidly. There are approximately 59 calls per minute, sometimes repeated for 15 minutes or longer. Cleaves reports hearing the bird call continuously for more than 1000 calls.

There appears to be the impression among numerous individuals who have had some musical training that the sounds of nature, and particularly of birds and insects, have numerous harmonics. Except for a few birds such as geese, ducks, and quail, the "tones" produced are usually free from harmonics at least in the audible range. Mrs. Wing (Auk, 68: 189–193, 1951) in her fine work on the variations in the song of the Hermit Thrush indicates the presence of harmonics. It is possible that this bird does sing a fundamental with one or more audible harmonics; it is more likely that two or more short pulses of notes in sequence separated by short intervals are interpreted as being simultaneous and therefore harmonic. In a recording of the Eastern Hermit Thrush by Jerry Stillwell no harmonics were visible on the oscilloscope. The calls of the majority of our song birds produce typical sine waves which, however, are frequency modulated, and on the oscilloscope they show considerable amplitude modulation which makes partial envelopes of sound.

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The Nest of the Long-billed Gnatwren (*Ramphocaenus rufiventris*).—The affinities of the neotropical genus *Ramphocaenus* have been in doubt. Formerly regarded as belonging to the sub-oscine antbird family, Formicariidae (Ridgway, U. S. Natl. Mus. Bull., 50 [5]: 14, 1911), this genus is now considered to be truly oscine and is allocated to the same subfamily as the gnatcatchers (*Polioptila*) (Wetmore,