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Weebill Vocalisations – An Undescribed Trill

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Foraging flocks of the Weebill *Smicromis brevirostris* regularly used as a contact call a strong and distinctive trill of several seconds duration. This Weebill trill vocalisation has not previously been described, and I regard it as diagnostic of species.

Pizzey (1997) mentions the most typical Weebill song as a 'deep, far-carrying weebill; weebit-weebee! or willy-weet, willy-weetee!'. A harsh contact call is described variously as *tidid*; *chitz*; *tizz*. Schodde & Tidemann (1988), Serventy (1982), Simpson (1986) and Slater (1989) concur.

Frith (1984) mentions a soft trill being used by the Striated Thornbill *Acanthiza lineata* during the breeding season but this is the only mention in the literature of long trilled calls in either thornbills or Weebills.

Methods

Published field guides and birdsong cassettes were consulted in an attempt to identify the significant trills of a mystery bird that called frequently near my home at Capertee Valley in the Central Tablelands of New South Wales. Thornbills or Weebills were suspected, yet no description of this call could be found. I resolved to observe, identify and document the calls.

Field observations were made in dry woodland habitat during summer, autumn and spring of 1998 and trills were taped during the afternoon of 10 April 1998, using a Sony DAT TCD-D10 PRO digital tape recorder and Sennheiser ME68 directional microphone. Birds

were stalked to within 10-2 m for recording purposes.

Because the trills occurred only periodically, the tape was kept running as Weebills were stalked. Three hours of taped recordings (1430-1730 h) produced several useful sequences.

Sound files of vocalisations were made using a Macintosh Performa 5200 computer and SOUNDEDIT software (Farallon Computing Inc., v.2.0.5, 1990) operating at 22.26 kHz per second. AUDIOGRAPH (v.2.0.5, Ralph Sutherland, 1995) was used for the production of the spectrograms and waveform, and for sound analysis.

In describing various calls, I use *weebill* in italics to describe a call that sounds like that word, and Weebill with a capital to refer to the bird itself.

Results

Field observations

On 10 April 1998, numerous Weebills in the company of Yellow Thornbills *Acanthiza nana* were foraging in eucalypts, often fluttering at the outer edges of foliage and difficult to observe. Conditions were sunny and calm after a mid-day storm and 8 mm rain with ambient temperature about 18°C. Binoculars were used to make positive identifications of calling Weebills. Trills were made when Weebills were perched and at an above-ground height of between 2-7 m. Trills were quite loud (clearly audible at a distance of 100 m) and from less

than one to more than five seconds duration. The pitch was fairly even. It is considered that the trill calls came from adult Weebills.

Short trills were sometimes combined in phrases that included the more usual *weebill* calls but at other times a longer solo trill was used, apparently as a contact call. On overcast or drizzling days during April the *weebill* call was rarely used and foraging Weebills communicated instead with periodic bouts of trilling. A trill of several seconds duration would be immediately answered with trills from one or more Weebills, some distance from the first. Such trill sequences would occur at intervals of five or ten minutes, or longer. On hot and sunny days the typical *weebill* song variations were frequently heard, with solo trills occurring less often.

On several occasions in April the trill occurred in response to the alarm call of a White-plumed Honeyeater *Lichenostomus penicillatus*, e.g. Fig. 1(b). On another occasion the trill occurred in a territorial dispute with a female Red-capped Robin *Petroica goodenovii*, (Fig. 1f). In November, a five second trill was used as a warning call when a hawk flew close overhead.

Spring breeding vocalisations were observed during October and November 1998 and rarely (although sometimes) included the trill. Thus, trills were most likely to be heard during late summer and autumn as a contact call, especially in calm conditions of early morning, late afternoon, after rain, and on overcast or drizzling days.

In addition to the Capertee Valley observations a commercial cassette Bird Songs of Canberra (1988) was found to contain a minor example of a Weebill trill, a spectrogram of which has been included in this study for comparison (Fig. 1c). This Weebill sequence was recorded by F. White on 30 August 1985 at Castle Hill, Australian Capital Territory. In the recording, a long series of typical *weebill* calls concludes with a short and broken trill sequence. The trill was analysed and found to match well with the Capertee Valley trills.

Analysis of spectrograms

The spectrograms (Fig 1a–f) demonstrate the Weebill trill and also verify the identity of the caller, as follows. A trill precedes a diagnostic *weebill* call in Figure 1f, positively identifying the triller as a Weebill. Further, introductory three-note *trip* syllables were found to be diagnostic in the spectrogram analysis. Three such *trip* syllables precede a *weebill* call as shown in Figure 1e. Eight of these same *trip* syllables precede a trill in Figure 1d. Quarter-speed playback of *trips* aurally con-

firmed the match in (Fig. 1e and d), proving that the trill shown in Figure 1d is from a Weebill. Trills shown in Figure 1a–c clearly match up with the proven trills (Fig. 1d and f).

Trill sequences in Figure 1a–f occur within a frequency range of 4–5.6 kHz and are fairly level in pitch, sometimes slightly fluctuating or falling in pitch towards the end. Individual trill notes in all examples show a similar down-slurred structure. The rate of trilling is constant with 26 notes per second. (By comparison, the trill of a Superb Blue Wren *Malurus cyaneus* measured 20 notes per second, showed a wider

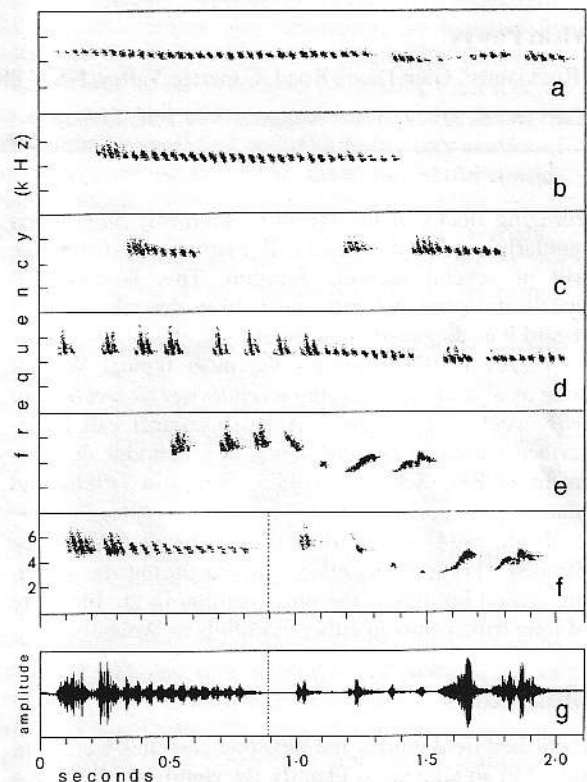


Figure 1 Spectrograms (a–f) and waveform (g) of Weebill vocalisations, all examples except (c) are from Capertee Valley NSW. (a) Weebill trill of 2.10 s duration. (b) Weebill trill in response to alarm call of a White-plumed Honeyeater. (c) Weebill trill from Canberra, ACT. (d) Weebill trill preceded by eight *trip* syllables. (e) Three *trip* syllables followed by a typical *weebill* phrase. (f) Weebill trill followed by a typical *weebill* phrase (in dispute with a female Red-capped Robin). (g) waveform of (f) comparing amplitude of trill and *weebill* phrase. NB: dotted line in (f) and (g) indicates where a 1.16 s pause has been edited, in order to fit the calls into the 2.10 s width of the Figure.

kHz frequency range in individual notes and sounded noticeably different in the field.) The longest recorded Weebill trill was 4.45 seconds (not illustrated).

Figure 1f is shown as a waveform in Figure 1g to illustrate the amplitude of the trill as compared with the *weebill* call. This sequence was also analysed using the Power Spectrum facility of AUDIOGRAPH. The trill measured 6 dB less than the *weebill* call. Given that the intensity of sound will diminish by 6 dB for each doubling of distance from a calling bird (Catchpole & Slater 1995), then the trill would carry just half the distance of the *weebill* call. This finding is consistent with field observations.

Discussion

The trill described here appears to be a significant part of the repertoire of the Weebill, used as a warning call during the breeding season, and as a contact call in feeding flocks that congregate after the spring-summer breeding season.

The trill occurs in areas other than Capertee Valley, as shown by the Canberra trill. Possibly, use of the trill is widespread across the range of the Weebill.

The Weebill is Australia's smallest bird and can be difficult to observe when constantly fluttering in eucalypt foliage. Foraging flocks often include thornbills and other small birds. The fact that the Weebill trill has not previously been described may simply be because observers were unable to positively identify the caller.

There are probably a significant number of undescribed passerine songs and calls, particularly where the bird (such as the Weebill) is small and difficult to ob-

serve or if behaviour is cryptic when the calls are given. This Weebill study shows how songs and calls could be analysed on a home-computer and, together with field observations, extend the known repertoire of a species.

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