Pnoepyga species, but the short wings and weak short flight near the ground were very similar (Cox & Sherpa 1998).

Taken together, the observed characters were considered diagnostic by the authors and the editor of *Ibisbill*. However, objections raised by subcontinental bird authorities regarding the observer as a non-ornithologist, the record's particularly important status as a new species for Nepal, its unusually high altitude and relatively far western location in Nepal (c.125 km from the border with Sikkim) have resulted in the record remaining unaccepted.

My new record from Chitre Danda c.105 km from the Sikkim border confirms Long-billed Wren Babbler for Nepal, probably as a resident. Chitre Danda harbours an unusually dense and seemingly bird-species rich tract of moist temperate and subtropical forests in Nepal. J. Bland (*in litt.* 2004) assessed the diversity and habitat associations of birds along a gradient of forest disturbance on Chitre Danda from 1992 to 1995 and recorded 230 species within 2 km of Chitre village. The remoteness of the area and wet conditions caused by proximity to high mountains have limited conversion for agriculture and grazing, especially on north slopes. Subtropical forests in particular retain a dense understorey that is generally lacking in this forest type elsewhere in Nepal (pers. obs.). Similarly intact tracts may exist, however, in poorly explored upper reaches of the Arun and Tamur watersheds. These areas may contain suitable habitat for Long-billed Wren Babbler and, as at Chitre Danda, additional Eastern Himalaya species collected by Hodgson and initially listed as coming from Nepal.

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REFERENCES

Ali, S. (1962) *The birds of Sikkim*. Madras: Oxford University Press.

Ali, S. & Ripley, S. D. (1987) *A compact handbook to the birds of India and Pakistan*. Second edition. Delhi: Oxford University Press.

Cocker, P. M. & Inskipp, C. (1988) *A Himalayan ornithologist: the life and work of Brian Houghton Hodgson*. Oxford: Oxford University Press.

Collar, N. J. (2006) A partial revision of the Asian babblers. *Forktail* 22: 85–112.

Collar, N. J. & Robson, C. (2007) Family Timaliidae (babblers). Pp.70–291 in J. del Hoyo, A. Elliott & D. A. Christie, eds. *Handbook of the birds of the world*, 12. Barcelona: Lynx Edicions.

Cox, J. H. Jr. & Sherpa, C. (1998) Long-billed Wren Babbler *Rimator malacoptilus*: a new species for Nepal. *Ibisbill* 1: 118–119.

Grimmett, R., Inskipp, C., & Inskipp, T. (1998) *Birds of the Indian Subcontinent*. London: Christopher Helm.

Grimmett, R., Inskipp, C. & Inskipp, T. (2000) *Birds of Nepal*. London: Christopher Helm.

Inskipp, C. & Inskipp, T. P. (1991) *A guide to the birds of Nepal*. Second edition. London: Croom Helm.

Rasmussen, P. C. & Anderton, J. C. (2005) *Birds of South Asia: the Ripley guide*. Washington D.C. and Barcelona: Smithsonian Institution and Lynx Edicions.

Rappole, J. H., Thien Aung, Rasmussen, P. C. & Renner, S. C. 2010 (in press) Ornithological exploration in the southeastern sub-Himalayan region of Myanmar. In S. C. Renner & J. H. Rappole, eds. *Bird diversity of the Eastern Himalayas and southeastern sub-Himalayan Mountains – center of endemism or many species in marginal habitats?* Washington, DC: American Ornithologists' Union (*Ornithological Monographs*).

Smythies, B. E. (1949) A reconnaissance of the N'Mai Hka drainage, northern Burma. *Ibis* 91: 627–648.

Smythies, B. E. (2001) *The birds of Burma*. Fourth edition. Kota Kinabalu, Malaysia: Natural History Publications (Borneo).

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We are sorry to report the death of Jack Cox between the acceptance and publication of this note. Pdfs are available from mail@orientalbirdclub.org.

Radio-frequency chaff in a nest of Pacific Swift *Apus pacificus*

CHANG-YONG CHOI, HYUN-YOUNG NAM and JONG-GIL PARK

Swifts are aerial birds with highly specialised morphology for aerial foraging habits and high speed flight (del Hoyo *et al.* 1999). They require open areas with adequate concentrations of aerial plankton, which consists of a wide variety of insects and arachnids (Chantler & Driessens 1995, del Hoyo *et al.* 1999). During the breeding season, not only their food but also nesting materials are typically collected from airborne detritus (del Hoyo *et al.* 1999).

Among the four species of swift reported from Korea, Pacific Swift *Apus pacificus* is the most common, being an abundant summer visitor to coastal areas and islands of the Peninsula (Lee *et al.* 2000, Choi *et al.* 2009), but little is known about its breeding biology and nest materials owing to the limited accessibility of its nests on cliffs. On 10 July 2008, just after the fledging of two young swifts, we collected the nest of a Pacific Swift (*A. p. pacificus*) in a horizontal crevice of a sheer coastal cliff exposing sedimentary rock layers on Chilbaldo Islet (34°47′N 125°47′E), Jeonnam province, Republic of Korea. The height of the nest and cliff were 50 m and 125 m above sea

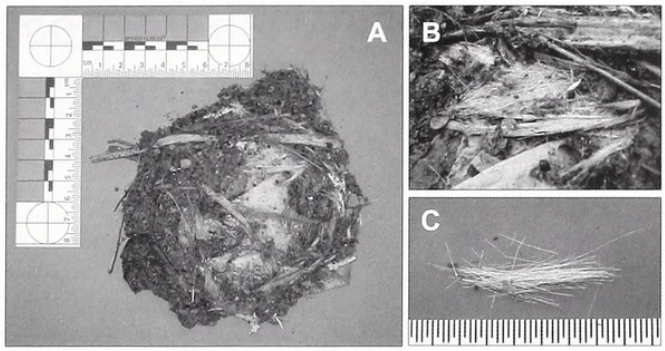

Figure 1. (A) Bottom view of the nest of a Pacific Swift *Apus pacificus* collected on Chilbaldo Islet, Jeonnam Province, Korea (10 July 2008). (B) Chaff fibres among herbaceous plants in the nest. (C) Chaff fibres separated from the nest (unit: mm).

level, respectively. The nest was mainly composed of herbaceous plants (approximately 40% by volume), plastic bags (40%), other birds' feathers and the other materials (10%), and a clump or mat of silver-coloured fibres (10%). On close examination, the fibres were identified as glass fibres derived from radio-frequency (RF) chaff (hereafter chaff).

Chaff is a defensive countermeasure designed to reflect radar waves and to obscure target equipment from radar tracking sources (Arfsten *et al.* 2002, 2004). Chaff consists of almost microscopically thin aluminum-coated glass fibres that can be released into the atmosphere in great densities (Lee 2000, Wilson *et al.* 2002, Arfsten *et al.* 2004). Although the chaff is sometimes used for scientific experiments (Lee 2000), it is released mainly for military purposes by ships, ground vehicles and aircraft (Hullar *et al.* 1999, Arfsten *et al.* 2002, 2004, Wilson *et al.* 2002). Owing to the extremely light mass of a chaff fibre (0.56×10^{-5} g/fibre; Lee 2000), the fibres can remain suspended in air anywhere from 10 minutes to 10 hours according to the atmospheric conditions, and they can travel considerable distances from the release point (Arfsten *et al.* 2002). With a clear sky and slightly unstable atmospheric conditions, one chaff release experiment (460 g of chaff with 82,000,000 fibres) revealed that wind and thermodynamic effects spread fibres horizontally over 40 km in the course of 2 hours (Lee 2000). Some chaff plumes containing c.900 g of fibres have been reported to drift over 270 km from the point of release (Arfsten *et al.* 2002).

Hullar et al. (1999) estimated that the U.S. Air Force dispenses about 500 tons of chaff per year both in the USA and elsewhere. In spite of its massive use for military training and increased concerns on the accumulation of aluminium, chaff releases are not suggested to have significant effects on ecosystem functioning in either terrestrial or aquatic environments to date (Hullar *et al.* 1999, Arfsten *et al.* 2002, Wilson *et al.* 2002) owing to its low deposition rate (1.0 g/ha/yr in US military operating areas: Hullar *et al.* 1999). There is no available estimate of the annual gross release of radio-frequency chaff through military activities and scientific experiments in the Republic of Korea, but it is clear that the chaff fibres drift around breeding colonies of swifts in Korea.

It is unsure whether the chaff is beneficial for breeding swifts as a new source of nest material, because the risk of exposure for swifts through ingestion or persistent contact has never been examined. In this report, we confirmed that the drifting chaff fibres were used as nesting materials by the breeding Pacific Swift in Korea. Although there were some records of chaff in the nests of swifts in Europe during World War II (Perrins 2009), to our knowledge this is the first report of the occurrence of chaff in a nest of the Pacific Swift.

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REFERENCES

Arfsten, D. P., Wilson, C. L. & Spargo, B. J. (2002) Radio frequency chaff: The effects of its use in training on the environment. *Ecol. Environ. Safety* 53: 1–11.

Arfsten, D. P., Burton, D. T., Fisher, D. J., Callahan, J., Wilson, C. L., Still, K. R., & Spargo, B. J. (2004) Assessment of the aquatic and terrestrial toxicity of five biodegradable polymers. *Environ Research* 94: 198–210.

Chantler, P. & Driessens, G. (1995) *Swifts: a guide to the swifts and treeswifts of the world.* Sussex: Pica Press.

Choi, C. Y., Park, J. G., Lee, Y. S., Min, M. S., Bing, G. C., Hong, G. P., Nam, H. Y. & Lee, H. (2009) First record of the Himalayan Swiftlet *Aerodramus brevirostris* (Aves: Apodiformes) from Korea. *Korean J. Systematic Zoology* 25: 269–273.

del Hoyo, J., Elliott, A. & Sargatal, J. (1999) *Handbook of the birds of the world*, 5. Barcelona: Lynx Edicions.

Hullar, T. L., Fales, S. L., Hemond, H. F., Koutrakis, P., Schlesinger, W. H., Sobonya, R. R., Teal, J. M. & Watson, J. G. (1999) *Environmental effects of chaff: a select panel report to the Undersecretary of Defense for Environmental Security.* NRL/PU/6110- -99-389. Washington: Naval Research Laboratory.

Lee, D. I. (2000) A WSR-88D radar observation of chaff transport and diffusion in clear sky. *Environ. Sci.* 4: 263–271.

Lee, W. S., Goo, T. H. & Park, J. Y. (2000) *A field guide to the birds of Korea.* Seoul: LG Evergreen Foundation.

Perrins, C. (2009) *The encyclopedia of birds.* Oxford: Oxford University Press.

Wilson, C. L., Arfsten, D. P., Carpenter, R. L., Alexander, W. K. & Still, K. R. (2002) Effect of navy chaff release on aluminum levels in an area of the Chesapeake Bay. *Ecol. Environ. Safety* 52: 137–142.

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