

A Swinhoe's Storm-petrel (*Hydrobates monorhis*) in French Guiana: the first record for South America

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ABSTRACT: A Swinhoe's Storm-petrel (*Hydrobates monorhis*) captured in French Guiana in May 2017 is the first documented record for South America. The circumstances of the capture are presented and the process of identification is summarized. The origin of this bird and sightings of Swinhoe's Storm-petrel in the Atlantic are discussed.

KEY-WORDS: Swinhoe's Storm-petrel, *Hydrobates monorhis*, Ile du Grand-Connétable.

Swinhoe's Storm-petrel (*Hydrobates monorhis*) breeds in the northern summer mainly on islands in the Yellow Sea and the Sea of Japan. It is a long-distance migrant, travelling in the non-breeding season mainly to the northern Indian Ocean, as far west as Somalia. There is a handful of westerly records south of the equator in the southwest Indian Ocean. There has been an increasing number of sightings in the Atlantic north of the equator since first recorded in 1983, though the origins and breeding status of these birds are unknown (Flood & Fisher 2013). This article documents the first record of Swinhoe's Storm-petrel for South America.

Ile du Grand-Connétable Réserve Naturelle is an island nature reserve 15 km off the mouth of the Approuague Estuary, French Guiana (about 4°49'N; 51°55'W). The nature reserve was created to protect the breeding colonies of six seabirds: Magnificent Frigatebird (*Fregata magnificens*), Brown Noddy (*Anous stolidus*), Laughing Gull (*Larus atricilla*), Sooty Tern (*Onychoprion fuscatus*), Cayenne Tern (*Thalasseus sandvicensis eurygnathus*), and Royal Tern (*T. maximus*).

A seabird monitoring program for Ile du Grand-Connétable involves weekly visits April–December, including a few days on the island mid breeding season (May), and fortnightly visits January–March. Mist nets are used to capture breeding gulls and terns but are unlikely to capture a storm-petrel. No storm-petrel had been seen on or from the island prior to May 2017.

K.P. and colleagues visited Ile du Grand-Connétable for a few days in May 2017. Overnight accommodation was a small hut with minimal lighting. On 25 May, around 7:30 h, a storm-petrel collided with the roof of

the hut and dropped unharmed to the ground. All storm-petrels previously recorded in French Guiana have been “white-rumped” (*i.e.* have white uppertail-coverts): the familiar Wilson's Storm-petrel (*Oceanites oceanicus*) and nominate Leach's Storm-petrel (*Hydrobates leucorhous*), and the vagrant Band-rumped Storm-petrel (*H. castro sensu lato*) (Tostain *et al.* 1992, Comité d'homologation de Guyane 2016). However, the Ile du Grand-Connétable storm-petrel was “dark rumped” (*i.e.* had dark uppertail-coverts) and warranted further study.

The plumage aspect was recorded, feathers were inspected for wear and moult, and the condition of the brood patch was noted. Biometrics were taken. A correct-sized ring was not at hand to ring the bird. The bird was kept safe in a box overnight. Next morning it was taken out to sea on a motorboat, released away from shore and predators, and flew off strongly until lost to view. Photographs were taken at night, in the morning, and as the bird flew off after release. The tentative identification Swinhoe's Storm-petrel (*H. monorhis*) was based on Flood & Fisher (2013). A description of the storm-petrel and photographs were sent to R.L.F. who confirmed the identification (Figs. 1A–F).

DESCRIPTION

Main features of plumage aspect: overall dark with contrasting pale upperwing-covert bars. Strong gray cast to head and neck. Remainder of the plumage aspect had strong brown tones. Body feathers and scapulars dark grayish-brown. Crucially, all uppertail-coverts wholly and

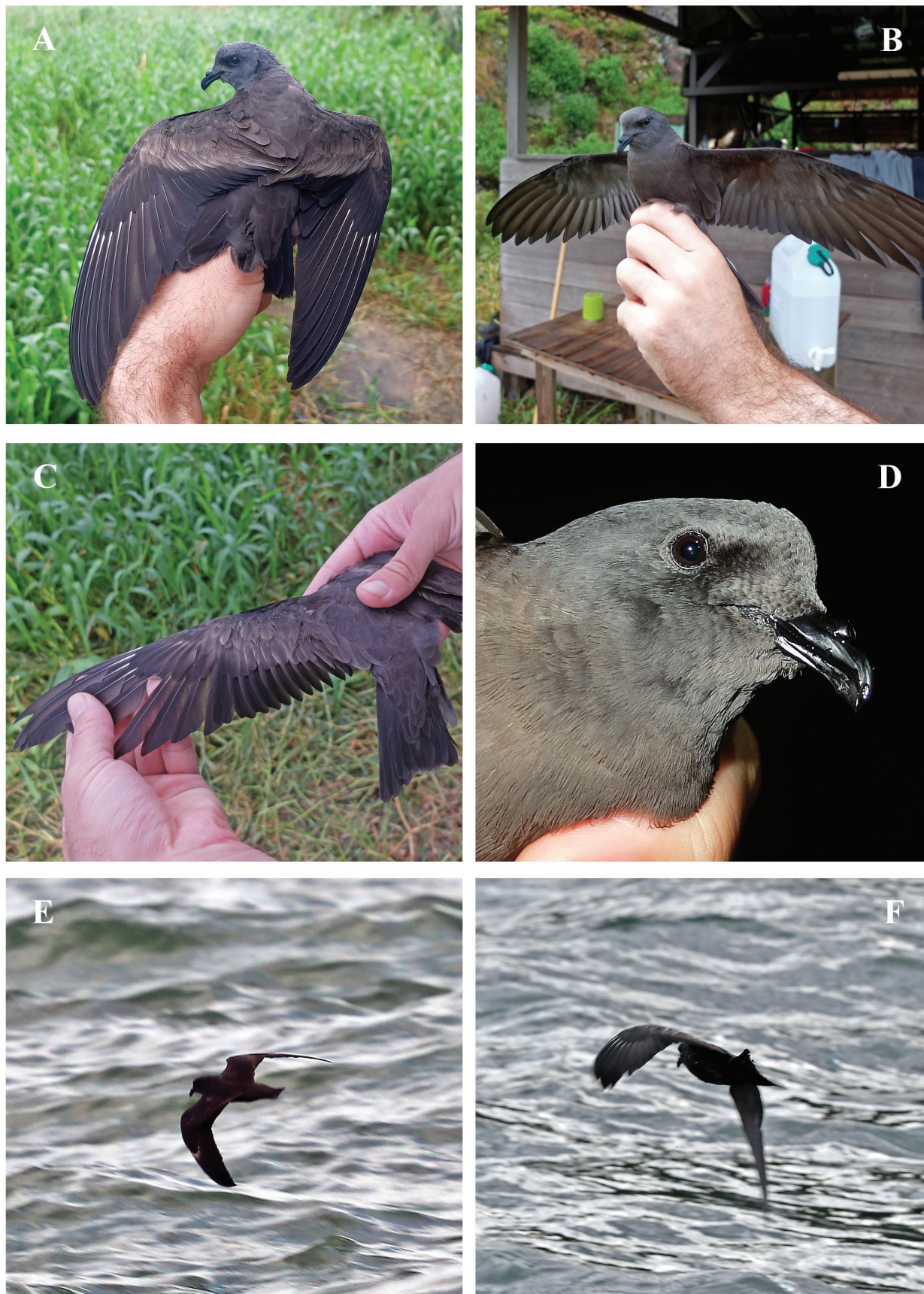


Figure 1. Swinhoe's Storm-petrel *Hydrobates monorhis*, 26/27 May 2017, Ile du Grand-Connétable Réserve Naturelle, French Guiana (A–F). Photo author: J. Tribot.

unequivocally dark grayish-brown. Contrasting warm-toned buff-colored upperwing-covert bars: long, broad, and fell short of the leading edge of the wing. White bases to outer primary shafts p6–p10. Underwing-coverts and axillaries dark grayish-brown. Flight feathers dark grayish-brown in low contrast with the slightly paler body feathers, giving the impression of a mainly concolorous plumage aspect.

Main features of structure: on release, after the initial hurry to get away, wings long and quite broad, with medium-length hands, long arms, and fairly blunt wing tips. Caudal projection medium-length. Tail held largely closed in flight showing a shallow notch. Bill medium length and quite deep for a storm-petrel. Short-legged, typical of northern storm-petrels.

Moult and wear: remiges quite fresh. Upperwing-coverts and rectrices had light to moderate wear. No evidence of active moult.

Brood patch: 0/0 (*i.e.* feathered, not vascularised).

Sex: unknown. Actual wing measurements indeterminate against male/female measurements in BWP*i* (2006, see Table 1). In any case, these wing measurements were found to be unreliable in sexing birds (Miles *et al.* 2014).

Elimination of confusion species: the similar-sized nominate Leach's Storm-petrel with a white “rump patch” is common in the Atlantic. Variation in the white “rump patch”, discoloration, wear and moult, can lead to the appearance of a dark “rump patch” (Flood & Fisher 2013). The French Guiana storm-petrel had a full set of uppertail-coverts that were in good condition and wholly and unequivocally all dark. In addition, Leach's Storm-petrel rarely has white bases to the outer primary shafts, its blackish-brown feathers bleach browner but do not acquire “strong” brown tones, and the upperwing-covert bars are normally cool-toned grayish and not warm-toned buff.

The “dark-rumped” Matsudaira's Storm-petrel (*H. matsudairae*) is a potential vagrant to the central Atlantic. Its breeding and non-breeding ranges are similar to Swinhoe's Storm-petrel and there are records from offshore of Durban and Cape Town in South Africa, on the margins of the South Atlantic. The plumage aspect is similar to Swinhoe's Storm-petrel – both exhibit strong brown tones to the plumage aspect, have pale upperwing-covert bars, and pale forewing patches. However, there are key differences in plumage aspect (notwithstanding the effects of light) and structure (mostly relevant to flight views) (Flood & Fisher 2013):

On Swinhoe's, the upperwing-covert bars are quite conspicuous, being pale buff, long and broad, slightly curved though of fairly even width, and fall just short of the leading-edge. On Matsudaira's, they are rather inconspicuous, being dull buff, long and very broad, slightly curved though of fairly even width, and clearly reach the leading-edge.

Matsudaira's normally has more obvious pale forewing patches than Swinhoe's, head-on like aeroplane landing lights.

The wings look proportionately large in both species, but Matsudaira's has relatively longer and broader wings than Swinhoe's so that in flight its wings look proportionately very large.

Matsudaira's has a relatively small squarish head that looks oddly small relative to the size of the rest of the bird; Swinhoe's has a relatively large squarish head (emphasized by a robust bill, at least in some birds).

Matsudaira's has a relatively long tail with a deep fork; Swinhoe's has a medium-length tail with a shallower fork.

That said, the biometrics of these two storm-petrels do not overlap, thus immediately ruling out the larger Matsudaira's Storm-petrel (Flood & Fisher 2013).

Table 1. Comparison of the biometrics of the Swinhoe's Storm-petrel (*Hydrobates monorhis*) captured in French Guiana with biometrics of birds captured in the northern Atlantic and biometrics published in the literature (lengths in mm and body mass in g; m = male, f = female). FRGU = French Guiana, FIBO = Fair Isle Bird Observatory (Scotland) (Miles *et al.* 2014), NORW = Røst (Norway) (T. Anker-Nielsen *in litt.* 2017), TYNE = Tynemouth (England) (Cubitt 1995), SPBP (Flood & Fisher 2013), APSW (Onley & Scofield 2007), PASN (Howell 2012), BWP*i* (Birds of the Western Palearctic *interactive* 2006), HBW*a* (Carboneras *et al.* 2017, in Handbook of Birds of the World alive). In parenthesis are sample sizes (*n*) where known. *Presumed erroneous.

	FRGU	FIBO	NORW	TYNE	SPBP	APSW	PASN	BWP <i>i</i>	HBW <i>a</i>
Body mass	45	44.4–44.6 (2)	47.8 (1)	–	38–43	65–78*	–	–	25.6–53.5
Total length	195	–	–	–	180–200	180–210	180–200	–	180–200
Wing length	151	154–159 (2)	158 (1)	164–167 (3)	–	146–165	–	m 146–157 f 150–165	–
Wingspan	455	–	–	–	450–480	450–480	450–500	–	440–450
Head & bill length	36.3	–	38.1 (1)	–	–	–	–	–	–
Bill length	15.5	14.1–14.5 (2)	13.9 (1)	14.5–14.9 (3)	–	–	–	–	–
Tarsus length	27.7	24.3–25.7 (2)	–	24.4 (1)	–	–	–	–	–

Vagrancy potential is relatively low for the other “dark-rumped” storm-petrels of the Pacific Ocean. Even so, biometrics rule out the larger Black Storm-petrel (*H. melania*), Markham's Storm-petrel (*H. markhami*), and Tristram's Storm-petrel (*H. tristrami*), and the smaller Least Storm-petrel (*H. microsoma*) (Parkin 1995, Howell 2012, Sausner *et al.* 2016). Of the species where biometrics overlap, among other characteristics, the ashy-gray plumage of Ashy Storm-petrel (*H. homochroa*) and the blue-gray plumage of Fork-tailed Storm-petrel (*H. furcatus*) rule them out. The “Leach's/*leucorhous* complex” of the northeast Pacific includes “dark-rumped” birds. Of these, Chapman's Storm-petrel (*H. l. chapmani*) is about the same size as Swinhoe's Storm-petrel, but it normally lacks white bases to the outer primary shafts and some birds have a paler gray “rump patch” (Howell 2012).

Occurrence in the Atlantic Ocean: Swinhoe's Storm-petrel is an enigma in the Atlantic Ocean. It was first recorded and trapped in 1983 on the Selvagen Islands (Portugal), northeast Atlantic (Robb *et al.* 2008). Since then, there has been a steady trickle of records in the North Atlantic and identification has been confirmed using DNA (Bretagnolle *et al.* 1991). To July 2017, we know of 46 documented records (Flood & Fisher 2013, Demey 2016, Rare Bird Alert UK, B. Patteson & K. Sutherland *in litt.* 2017): 20 trapped, 1 captured sick, 24 observed at sea, and one heard only. Of these, 41 are from the northeast Atlantic, ranging from Norway to south of the Cape Verde Islands and Mauritania, including the Canary Islands, the Azores Islands, and the Mediterranean Sea. The remaining five records are from the Gulf Stream off Hatteras, North Carolina, USA.

A dark-rumped storm-petrel recorded off Madeira Island (Portugal) in 1829 was the first of its kind for the region and suggests that Swinhoe's Storm-petrel may have been present in the North Atlantic for perhaps 200 years (Bourne 1990). However, breeding in the North Atlantic, though likely, is not proven. For example, in the Selvagen Islands, northeast Atlantic, there are records of males and females, singing birds, and birds seen entering suitable crevices, but searches failed to confirm breeding (Silva *et al.* 2016, F. Zino *in litt.* 2017). The record of a Swinhoe's Storm-petrel on Ile du Grand-Connétable shows that in fact breeding could occur on any suitable island in the tropical and temperate Atlantic.

When and how Swinhoe's Storm-petrel arrived in the northern Atlantic is a mystery discussed in Flood & Fisher (2013). There are two possible routes from the northwest Indian Ocean to the Atlantic Ocean: (1) Via the Red Sea and the Mediterranean Sea. (2) Via the southwest Indian Ocean, round the southern tip of Africa, and into the South Atlantic.

Evidence to support the first possibility involves a small number of records off Eilat (Israel), in the Red

Sea, and in the Mediterranean, completing the link to the Atlantic. However, this potential route has its sceptics since it involves an overland crossing (Morrison 1998).

Evidence to support the second possibility involves a few records from the Comoro Islands, offshore Mozambique, and off the east coast of South Africa (Flood & Fisher 2013, Carboneras *et al.* 2017, T. Hardaker *in litt.* 2017). Swinhoe's Storm-petrel in the southwest of its range could follow the prevailing airflow and breakaway eddies from the warm southward flowing Agulhas Current (*e.g.* Simon *et al.* 2013), around the southern tip of Africa into the South Atlantic (Bourne 1991, 1992, Parkin 1995). Notwithstanding a possible Swinhoe's Storm-petrel off Cape Town, South Africa, and two possible Swinhoe's Storm-petrels off Walvis Bay, Namibia, there is no Atlantic record south of the equator (Flood & Fisher 2013, T. Hardaker *in litt.* 2017).

That said, the presence of Swinhoe's Storm-petrel in the northern Atlantic could be the result of ongoing vagrancy, a single large event, or an ancient relict population (Bourne 1967, James & Robertson 1985, Bretagnolle *et al.* 1991). DNA analysis of birds from Tynemouth (England), and the Selvagen Islands, indicate that Swinhoe's Storm-petrels in the Atlantic Ocean and the Pacific Ocean are inseparable (Dawson 1992, Dawson *et al.* 1995). Thus, if there is a population inhabiting the Atlantic, rather than a trickle of vagrants, then the population must have become separated recently. Recent in terms of DNA analysis probably means no more than a few centuries ago, possibly since the Little Ice Age ended in the 1700s. Climatic and habitat variations may have permitted entry into the Atlantic around the tip of South Africa.

In this regard, the Ile du Grand-Connétable record is significant. It extends the known Atlantic range to the South American continent and is a step forward to understanding the occurrence of Swinhoe's Storm-petrel in the Atlantic Ocean.

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REFERENCES

- Bourne W.R.P. 1967. Long-distance vagrancy in the petrels. *Ibis* 109: 141–167.

- Bourne W.R.P. 1990. The first dark-rumped petrel. *Birding World* 3: 249.
- Bourne W.R.P. 1991. Dark-rumped storm-petrels in the North Atlantic. *Sea Swallow* 40: 62–63.
- Bourne W.R.P. 1992. Debatable British and Irish seabirds. *Birding World* 5: 382–390.
- Bretagnolle V., Carruthers M., Cubitt M., Bioret F. & Cuillandre J.-P. 1991. Six captures of a dark-rumped, fork-tailed storm-petrel in the northeastern Atlantic. *Ibis* 133: 351–356.
- BWPi. 2006. *Birds of the Western Palearctic, interactive DVD*. Oxford: Oxford and Bird Guides.
- Carboneras C., Jutglar F., de Juana E. & Kirwan G.M. 2017. Swinhoe's Storm-petrel (*Hydrobates monorhis*). In: del Hoyo J., Elliott A., Sargatal J., Christie D.A. & de Juana E. (eds.). *Handbook of the birds of the world alive*. Barcelona: Lynx Edicions (accessed from <http://www.hbw.com/node/52594> (access on 18 July 2017)).
- Comité d'homologation de Guyane. 2016. *Liste des Oiseaux de Guyane – version Mars 2016*: <http://files.biolovision.net/www.faune-guyane.fr/userfiles/ListeCHGdesOiseauxdeGuyanemars2016intro.pdf>
- Cubitt M.G. 1995. Swinhoe's Storm-petrels at Tynemouth: new to Britain and Ireland. *British Birds* 88: 342–348.
- Dawson R.J.G. 1992. Blood, sweat and petrels. *Birding World* 5: 443–444.
- Dawson R.J.G., Parkin D.T., Cubitt M., Won P.-O. & Zino F.J.A. 1995. DNA amplification and sequencing of unidentified dark-rumped *Oceanodroma* Storm-petrels (Aves) in the North Atlantic Ocean. *Boletim do Museu Municipal do Funchal* 4: 201–210.
- Demey R. 2016. Recent reports. *Bulletin of the African Bird Club* 23: 104–123.
- Flood R.L. & Fisher E.A. 2013. *North Atlantic seabirds: storm-petrels & Bulwer's Petrel*. Revised edition. Scilly: Pelagic Birds & Birding Multimedia ID Guides.
- Howell S.N.G. 2012. *Petrels, albatrosses, and storm-petrels of North America*. Princeton and Oxford: Princeton University Press.
- James P.C. & Robertson H.A. 1985. First record of Swinhoe's Storm-petrel *Oceanodroma monorhis* in the Atlantic. *Ardea* 73: 105–106.
- Miles W.T.S., Collinson J.M., Parnaby D. & Cope R. 2014. An analysis of biometrics, vocalisations and DNA of two Swinhoe's Storm-petrels trapped on Fair Isle in 2013. *British Birds* 107: 654–656.
- Morrison S. 1998. All-dark petrels in the North Atlantic. *British Birds* 91: 540–560.
- Onley D. & Scofield P. 2007. *Albatrosses, petrels and shearwaters of the world*. London: Helm.
- Parkin D.T. 1995. Editorial comment. In: Cubitt M. 'Swinhoe's Storm-petrels in Tynemouth: new to Britain and Ireland'. *British Birds* 88: 342–348.
- Robb M., Mullarney K. & the Sound Approach. 2008. *Petrels night and day*. Poole: The Sound Approach.
- Sausner J., Torres-Mura J.C., Robertson J. & Hertel F. 2016. Ecomorphological differences in foraging and pattering behavior among storm-petrels in the eastern Pacific Ocean. *Auk* 133: 397–414.
- Silva M.C., Matias R., Ferreira V., Catry P. & Granadeiro J.P. 2016. Searching for a breeding population of Swinhoe's storm-petrel at Selvagem Grande, NE Atlantic, with a molecular characterization of occurring birds and relationships within the Hydrobatinae. *Journal of Ornithology* 157: 117–123.
- Simon M.H., Arthur K.L., Hall I.R., Peeters F.J.C., Loveday B.R., Barker S., Ziegler M. & Zahn R. 2013. Millennial-scale Agulhas Current variability and its implications for salt-leakage through the Indian–Atlantic Ocean Gateway. *Earth and Planetary Science Letters* 383: 101–112.
- Tostain O., Dujardin J.L., Erard C. & Thiollay J.M. 1992. *Oiseaux de Guyane. Biologie, écologie, protection et répartition*. Brunoy: Alauda-Seof.
- Associate Editor: Alexander C. Lees.