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Author: Morris, Pat

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A reassessment of issues surrounding the Hastings Rarities, with particular reference to supposed fraud by George Bristow

by Pat Morris

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SUMMARY.—In 1962, a special issue of *British Birds* alleged that the number and pattern of records of rare birds from around Hastings, in southern England, between 1892 and 1930 were so improbable that fraud was the only reasonable explanation. A press conference resulted in absurdly exaggerated reports that encouraged general acceptance of the alleged fraud and in particular that George Bristow, a local taxidermist, was responsible. There are potential weaknesses in the statistical analysis of the purported fraud, and the case against Bristow was based on probability and innuendo, not solid evidence. Plausible information from Bristow and the respected ornithologist Norman Ticehurst was largely ignored, as were the practicalities of fraud, especially during wartime and in the absence of modern deep-freeze facilities. The lead author was apparently prejudiced against taxidermists. The allegations unfairly tainted Bristow and his profession, and have encouraged some distrust of historical datasets.

In 1962 two papers (Nelder 1962, Nicholson & Ferguson-Lees 1962) and an editorial (Hollom *et al.* 1962) formed a special issue of *British Birds*, which proposed the deletion of 542 specimen and 53 sight records of rare birds from the Hastings area of Sussex, in southern England, between 1892 and 1930. Among them were 16 taxa that, at the time, had not otherwise been recorded in Britain. The 595 records were listed numerically and became known as the Hastings Rarities, allegedly involving fraud by a local taxidermist, George Bristow (1862–1947). A press conference on 10 August 1962 resulted in widespread dissemination of greatly exaggerated reports and misinformation. For example, *The Yorkshire Post* stated that 600 birds had been struck off in ‘The biggest hoax in ornithological history, a birdwatcher’s Piltdown fraud’. It also commented that ‘if Hastings was not an El Dorado from the bird lover’s point of view it may well have been for Bristow’, quoting Nicholson as saying that rare birds could fetch as much as £30 apiece. *The Daily Telegraph* even quoted Bristow directly (despite that he had been dead for 15 years): ‘all of them [the birds sold to museums and collectors] said George Bristow as he briskly sold 542 specimens at up to £300 a time were found dead or shot in Britain’. *The Daily Sketch* claimed the so-called ‘Bird Detectives’ had ‘found that ... Mr George Bristow ... made good money’ and asserted that ‘the specimens may have been smuggled ashore by pilot boat’. No evidence was ever advanced to support either statement. *The West Sussex Gazette* reported that Bristow had shot the birds, although this was untrue. Few would have read the issue of *British Birds*, but the press reports were seen by millions, including syndications abroad.

The August 1962 issue of *British Birds* was a profound shock to many ‘old school’ ornithologists, including David Bannerman who wrote a scathing critique (Bannerman 1963). Another was Norman Ticehurst, co-author of *The handbook of British birds* (Witherby *et al.* 1938–41), who first expressed dismay at being duped by Bristow, then became indignantly critical. He protested that during 1900–16 he had ‘... thrashed out the whole

matter ... with Howard Saunders, Bowdler Sharpe, Meade-Waldo, Witherby and Hartert, and in 1952 with Bannerman and all were completely satisfied with the bona fides of the records'. He also confirmed that he and colleagues 'were constantly on the lookout for any evidence of fraud' (letter to James Harrison, 23 August 1960, Harrison Archives, Sevenoaks, Kent) probably in response to a preliminary statement by Hollom (1960); see Nicholson *et al.* (1969: 377).

Nevertheless, whilst the original authors were not responsible for crass journalism, the accusation of fraud has been accepted for more than 50 years and misinformation persists. For example, Wikipedia ([https://en.wikipedia.org/wiki/George_Bristow_\(ornithologist\)](https://en.wikipedia.org/wiki/George_Bristow_(ornithologist))) claims that Nelder calculated Bristow made £7,000 from his fraudulent activities, although neither Bristow nor money was mentioned by Nelder (1962). Harrop (2019) referred to the 'Pre-Bristow era' of fraud as if dishonesty was a proven historical fact and Bristow the culprit. Coulson (2003) linked the Hastings Rarities with the (proven) Piltdown Hoax. Bristow's infamy has been officially recognised by erection of a blue plaque on his old shop in St. Leonards, and the opprobrium cast upon him posthumously smeared the man and his profession.

There will be exasperation in some quarters that the matter is being raised again, but rather than dismiss this revival of an old controversy, I hope readers will consider the issues raised, some highlighted for the first time. Approximately 70% of the disputed species have been seen since in Kent (Taylor *et al.* 1981), Sussex (Thomas 2014) or both, with others observed elsewhere in the UK, suggesting that many records could have been genuine, but I am not seeking to change the ornithological record. I seek a balanced judgement, particularly in relation to the taxidermist George Bristow. Vernacular names given here are as in the original Hastings Rarities list to avoid confusion resulting from subsequent taxonomic revisions.

Exaggeration caused by inclusion of genuine records

The Hastings Rarities comprised published records of rare birds from the 'area' (defined as a 20-mile radius from Hastings Pier) between 1892 and 1930 (hereafter the 'era'). The records for the area/era included some potentially genuine ones. This was justified on the grounds that, as one could not determine which were genuine British specimens and which were not, they would all be included in the list of 542 unacceptable records of dead birds. Harrison (1968) objected, as did others, that the veracity of records had not been considered before undertaking the analysis and this was both uncritical and unscientific. The approach resulted in the rejection of many records for which significant validation exists. Norman Ticehurst checked his diaries from half a century earlier and offered plausible substantiation for many of the rejected records (quoted by Harrison 1968, but brushed aside by Nicholson *et al.* 1969). He included details of at least some of the collectors who had obtained disputed specimens, described as suspiciously anonymous by Nicholson & Ferguson-Lees (1962).

Six Ferruginous Ducks *Aythya nyroca* and a pair of Night Herons *Nycticorax nycticorax*, obtained locally but not formally recorded, were not listed. They belonged to Edwin Catt, a part-time local taxidermist, and support the validity of the rejected records. Another Night Heron (with good provenance) shot within the area, but just after the era, questions the justification for including the seven on the Hastings Rarities list. There were additional genuine specimens of suspect species, including Sabine's Gull *Xema sabini*, Aquatic Warbler *Acrocephalus paludicola* and Slender-billed Nuthatch *Nucifraga caryocatactes macrorhynchos*, which were obtained by Guy Mannering (1881–1966), a resident of Dover (Anon. 1985). They were not formally recorded and therefore not part of the Hastings Rarities series.

Mannering's specimens confirm the presence of these species in the area/era. Other independent observers saw species listed among the Hastings Rarities within the area/era, including the Duchess of Bedford, who recorded them in her diary (Bedford 1938), and E. C. Arnold (headmaster of Eastbourne College) who published accounts of Hastings Rarities being seen or shot within the area/era (Arnold 1907, 1936). Harrison (1968) also listed many unrecorded examples of disputed species within both the area and era, as well as afterwards, weakening the case for treating all of the Hastings Rarities as false. The existence of so many additional examples of disputed species suggests that the rarities were perhaps not so rare in the area/era after all.

Records were on the Hastings Rarities list for no other reason than that they had been recorded within the area/era. Nicholson & Ferguson-Lees (1962) admitted that 'several' of the records could be genuine, conceding later that this could apply to nearly half of them (Nicholson *et al.* 1969), a subtlety that has been overlooked by many subsequent authors. Nicholson & Ferguson-Lees (1962) also extended the era by nine years beyond the period covered by Nelder's analysis, thereby adding 79 records to the list of Hastings Rarities. The longer that list of disputed birds became, the more authoritative it appeared to be, strengthening the case for adding still more (a circular argument). But every genuine record of a species that was included challenges the case for condemning others on the list. The consequences are discussed below.

Fifty-three sight records were declared 'unacceptable' by Nicholson & Ferguson-Lees (1962) because they were 'closely linked in various ways' with the list of dead specimens. They nevertheless mentioned a 'refreshingly informative sight record of a Mediterranean Black-headed Gull [*Larus melanocephalus*] being fed... by ladies on Hastings seafront', but despite this apparently acceptable observation, two sightings from 1915 were on the list of disqualified records of live birds, as were five dead ones from that year and another in 1913. Thirty-two of the rejected sight records (60%) turned up dead the same day or soon after, tending to confirm their validity. But both records were then treated as separate and added to the numbered list of rejections, although in most cases they probably referred to the same bird (see Table 1).

TABLE 1

Dates (as accurate as known) of the 53 sight records that were rejected as part of the Hastings Rarities (HR), and the date of the next subsequent specimen of the same species that was recorded. * = seen dead 'in the flesh'.

Species	HR	Seen alive	Seen dead	HR no.
Squacco Heron <i>Ardeola ralloides</i>	543	October 1913	13 November 1913*	35*
Red-crested Pochard <i>Netta rufina</i>	544	January–February 1911	10 February 1911*	53, 54, 55, 56, 57
Ferruginous Duck <i>Aythya nyroca</i>	545	2 January 1912	2 January 1912	58*, 59*
Sociable Plover <i>Vanellus gregarius</i>	546	3 May 1907	3 May 1907	106*
Sociable Plover	547	May 1910	25–27 May 1910	107*, 108*, 109*, 110*
Sociable Plover	548	30 April 1914	9–18 May 1914	111*, 112*, 113*
Killdeer <i>Charadrius vociferus</i>	549	12–16 November 1915	12 November 1915	121*, 122*
Asiatic Golden Plover <i>Pluvialis fusca</i>	550	23 April 1914	23 April 1914	128*, 129*, 130*
Upland Sandpiper <i>Bartramia longicauda</i>	551	12 July 1908	18 July 1908	140*
Slender-billed Curlew <i>Numenius tenuirostris</i>	552	September 1910	21–23 September 1910	142, 143, 144
Pectoral Sandpiper <i>Calidris melanotos</i>	553	1 August 1906	19 September 1906	184
Broad-billed Sandpiper <i>Limicola falcinellus</i>	554	27 August 1920		
Black-winged Stilt <i>Himantopus himantopus</i>	555	7 August 1903		

Species	HR no.	Seen alive	Seen dead	HR no.
Black-winged Stilt	556	3 October 1910	9 October 1910	
Great Black-headed Gull <i>Larus ichthyaetus</i>	557	July 1911		
Mediterranean Gull <i>Larus melanocephalus</i>	558	July 1915	15–21 July 1915	233*, 234, 235, 236*
Mediterranean Gull	559	11 November 1915		
Bonaparte's Gull <i>Larus philadelphia</i>	560	April 1914	20, 26 April 1914	239, 240
White-winged Black Tern <i>Chlidonias leucopterus</i>	561	29 May 1904	29 May 1904	245*, 246*, 247*, 248, 249
White-winged Black Tern	562	29 May 1911	29 May 1911	250*, 251*, 252*
Alpine Swift <i>Tachymarptis melba</i>	563	3 August 1908		
Alpine Swift	564	9 October 1923		
Alpine Swift	565	June 1925		
Black Lark <i>Melanocorypha yeltoniensis</i>	566	29 January 1907	29 January 1907	301*
Black Lark	567	31 January 1907	31 January 1907	302*
Black Lark	568	January 1915	16 February 1907	303
Calandra Lark <i>Melanocorypha calandra</i>	569	17 May 1916	16 May 1916	307* 308*
White-winged Lark <i>Melanocorypha leucoptera</i>	570	3 November 1915	10 November 1915	314
Slender-billed Nutcracker <i>Nucifraga caryocatactes macrorhynchos</i>	571	December 1912	26, 28 December 1912	332*, 333*
Dusky Thrush <i>Turdus eunomus</i>	572	Feb–Mar 1915	3 March 1915	344*, 345*
Isabelline Wheatear <i>Oenanthe isabellina</i>	573	August 1905		
Aquatic Warbler <i>Acrocephalus paludicola</i>	574	August 1906		
Aquatic Warbler	575	summer 1909		
Icterine Warbler <i>Hippolais icterina</i>	576	8 May 1900		
Icterine Warbler	577	14 May 1901		
Icterine Warbler	578	2 September 1902		
Barred Warbler <i>Sylvia nisoria</i>	579	31 October 1902		
Collared Flycatcher <i>Ficedula albicollis</i>	580	5 May 1922	5 May 1922	429
Richard's Pipit <i>Anthus novaeseelandiae</i>	581	7 September 1901		
Tawny Pipit <i>Anthus campestris</i>	582	May 1906		
Black headed Wagtail <i>Motacilla flava feldegg</i>	583	May 1902		
Lesser Grey Shrike <i>Lanius minor</i>	584	6 November 1901		
Woodchat Shrike <i>Lanius senator</i>	585	29 April 1898	1 May 1898	478
Woodchat Shrike	586	June 1902	29 June 1901	479
Rose coloured Starling <i>Pastor roseus</i>	587	23 March 1902	10 June 1902	491
Rose coloured Starling	588	8–14 August 1914	8 August 1914	493*
Rose coloured Starling	589	August 1914		
Pine Grosbeak <i>Pinicola enucleator</i>	590	25 October 1905	25 October 1905	502*
Pine Grosbeak	591	30 October 1905	30 October 1905	503
Two-barred Crossbill <i>Loxia leucoptera</i>	592	15 January 1914	15 January 1914	516*
Two-barred Crossbill	593	8 February 1917		
Black-headed Bunting <i>Emberiza melanocephala</i>	594	25 December 1900		
Snow Finch <i>Montifringilla nivalis</i>	595	21 February 1905	22 February 1905	537

Whilst such double-counting by Nicholson & Ferguson-Lees makes little difference to the total numbers involved (and there is no evidence of double-counting by Nelder), basic principles were ignored, exaggerating the case for fraud and the seriousness of the Hastings affair, a point overlooked at the press conference and by later authors.

The statistical case

Nelder's paper formed the bedrock of the case for fraud and has been widely accepted as conclusive (Greenwood 2012). The basic unit for analysis was a record published in the formal literature. Records were grouped into rarity classes based on the number of English occurrences in Witherby *et al.* (1938–41). Nelder wrote that details would be deposited at the Edward Grey Institute, Univ. of Oxford, but searches made recently at my instigation reveal they cannot now be traced and may never have been lodged there (S. Wilcox *in litt.* 2020). The many rarity records for the area/era appear improbable, but the focus of Nelder's argument concerned patterns of occurrence (see Table 2). He used Chi-squared tests to establish the probability of the observed patterns being due to chance, a probability of less than 5% suggesting that some form of intervention had occurred.

TABLE 2

Occurrence of rarities recorded in different areas and eras (Nelder's Table 2, with his notation in brackets for each area/era). Species were assigned to rarity classes based on the number of English reports in the *Handbook of British birds* (Witherby *et al.* 1938–41). Nelder wrote that he would deposit details with the Edward Grey Institute, but these cannot now be traced there (see main text). The dates of the 'Hastings era' given by Nelder (1895–1924) differ slightly from those used by Nicholson & Ferguson-Lees (1892–1930). The reasons for this were not explained, but the difference is immaterial in respect of Nelder's analysis.

Area/era	Class 1 rarities	Class 2 rarities	Class 3 rarities	Total
Hastings area, 1895–1924 (XA)	243	108	165	516
Hastings Area 1925–54 (XB)	54	51	103	208
Rest of Sussex 1895–1924 (YSA)	15	16	45	76
Rest of Sussex 1925–54 (YSB)	19	13	32	64
Rest of Kent 1895–1924 (YKA)	11	11	22	44
Rest of Kent 1925–54 (YKB)	26	28	53	107
Totals	368	227	420	1,015

Was the Hastings area/era different from other areas/eras?—Chi-squared tests require that the samples being tested compare like with like. It was assumed (and explicitly stated by Nicholson & Ferguson-Lees 1962) that nothing about the Hastings area/era could account for the extraordinary abundance of rare birds. However, that assertion is open to question. The area included >60 km of coastline, patrolled by semi-professional beachcombers, helping to account for the various rare seabirds recorded. It also included a diversity of habitats whose ornithological richness is still evident (Sharrock 1976, Lack 1986), even after habitat loss and increased disturbance since the era. Although this has little effect on the occurrence of vagrants, it certainly attracted bird collectors, one of whom described 'The Crumbles' (a coastal area west of Hastings) as 'almost to idealize the requirements of the collector' (Arnold 1907).

Inland areas (i.e. beyond the 20-mile radius from Hastings Pier) were probably less visited by bird collectors because access was more difficult and collecting less fruitful than in the wetlands and open fields near the coast. Inland areas included extensive woodland, an unlikely habitat for casual shooters to roam, and within which there was no need for farmers and market gardeners to carry a gun to protect their crops. Direct comparison of

the Hastings area with 'the rest of Kent' and 'the rest of Sussex' (YK and YS in Nelder's analysis) is therefore questionable.

A second distinctive feature was the presence of George Bristow, whose father was also a taxidermist. They had a widespread community of local men who were encouraged to shoot unfamiliar birds and offer them for sale. Their firm was the principal local taxidermists for 40 years even prior to the era, and postal directories show the business was operating for longer than any other in the rest of Kent or Sussex.

Crucially, during the era, Hastings was home to a number of dedicated collectors who were competitively engaged in securing rarities and creating the formally published records upon which the statistical analysis was based. Among them were Boyd Alexander, Ruskin Butterfield, Michael Nicoll, and Norman & Claude Ticehurst. Although they did not live there, J. L. Bonhote, A. F. Griffith, Ernst Hartert and Howard Saunders collected specimens from the area/era and published records in the *Bulletin of the British Ornithologists' Club (BBOC)* and elsewhere (*British Birds*, *The Zoologist* and *The Hastings and East Sussex Naturalist*). Other notable collectors who visited the area during the period included G. Mannerling, E. C. Arnold, J. B. Nichols and the Duchess of Bedford. The British Ornithologists' Club (BOC) encouraged members to bring interesting specimens to its meetings and publish details in *BBOC*. It is not difficult to envisage that avid collectors vied with each other to exhibit notable specimens, promoting rivalry and an eagerness to publicise their latest acquisition, creating a positive feedback loop in which the appearance of interesting new items stimulated the search for still more. This scenario is supported by the disproportionate number of records (516) from the Hastings area published during the era (see Table 2), precisely the anomaly that Nelder identified.

Thus, it appears that the abundance of rarities in the Hastings area/era could have been the result of several factors combined: habitat diversity, a well-established taxidermist with a network of suppliers, and very active ornithologists dedicated to finding rare birds and publishing their records. Nowhere in the rest of Kent or Sussex were all three factors operating simultaneously during the era, and to such an extent, undermining the basic principle of comparing like with like using Chi-squared tests. In statistical parlance those factors would be termed 'confounding variables' because they each contribute to the data being analysed. Beyond question, Nelder's analysis demonstrated that the pattern of records in the Hastings area/era was statistically different from that elsewhere in Kent and Sussex. But it is impossible to establish the extent to which each of those factors may have contributed because of their interactions. Arguably, it is inappropriate to definitively attribute statistical significance to a single cause (e.g. fraud). An alternative interpretation might be that a statistically significant abundance of rare bird records in the area/era arose because the Hastings area was unusually likely to harbour rare birds and the era was a period when their occurrence was particularly likely to result in formal records being published.

A further statistical issue arises from the inclusion of genuine records in the Hastings Rarities list. Boosting the number of examples being analysed increases the likelihood of obtaining probability values that are statistically significant, simply because large samples are statistically more robust than small ones. The *proportions* of rare, genuine or fraudulent records may remain the same, but larger *numbers* effectively enhance probability values.

The pattern of different classes of rare birds.—Nelder's argument also focused on the relative numbers of records of birds in different categories of rarity. For example, the number of exceedingly rare (class 1) species within the Hastings area/era was improbably greater than that of 'commoner' rare birds (class 3). Extreme numbers within the area/era were improbable compared to the consistency witnessed in other areas and eras.

Here we must remember that the analysis was not based on occurrences, but published records. Records are not random samples, only occurrences that were formally recorded. Publication demands both that someone decided an account was worth producing and that an editor agreed it was sufficiently significant to merit publication. Thus, a filtering process was involved, a fundamental issue that has been overlooked. It is possible that class 3 rarities were no longer regarded as particularly special around Hastings, which was known to be an ornithologically rich area, and they were therefore less likely to be formally recorded from there. Records from the area submitted for publication might have been omitted or rejected because they were perceived as nothing special. Instead, attention there seems to have become focused on class 1 rarities, which were more likely to be published, especially by several local collectors dedicated to doing exactly that. Conversely, over the rest of Kent and Sussex, where bird collecting was evidently less intense, class 1 rarities were relatively more likely to escape notice and class 3 rarities more liable to be recorded because they had been less often observed hitherto.

For example, it appears suspicious that rare petrels were recorded from Hastings' beaches, but not Storm Petrels *Hydrobates pelagicus*. However, a Storm Petrel found on the beach at Hastings would scarcely merit publication as a formal record, whereas one found in Tunbridge Wells ('rest of Kent') probably would. Ticehurst (1909) commented it was 'not surprising' that Storm Petrel was a 'fairly frequent' visitor to the Kent coast. He then listed a dozen or so records in 120+ years, hardly a comprehensive list for a 'fairly frequent' visitor. Moreover, the records were clearly selective, those mentioned often being unusual occurrences that made an interesting story: 'shot with flock of hoopoes' and 'stunned with a stone', 'captured in the streets of Dover' for example. Ticehurst ended: 'while among other recent occurrences may be mentioned *one* [my italics] that is remarkable for the time of year...' (and found below a telegraph wire). Citing only that one from among the 'recent occurrences' clearly confirms editorial selectivity. Ticehurst also commented to Harrison: 'After all, the Tawny Pipit [*Anthus campestris*] is not such a very great rarity. I have over 60 subsequent records from our condemned area' (Harrison 1968: 107). It is impossible to know the extent to which these factors affected the patterns in Nelder's analysis, but it is clear that published records could involve a degree of editorial subjectivity, with a potentially significant effect on the designation of a species to a specific rarity class.

Other patterns were identified, including a bias towards males, potentially more valuable to a commercial taxidermist. But single-sex flocks can form seasonally (Cramp 1988, Catry *et al.* 2004, Lehtikoinen *et al.* 2017) and this would bias samples shot by collectors. 'Pairs' were also suspiciously frequent among the records, but many involved species of which male and female could not easily be separated by the shooter and were therefore probably not acquired intentionally as implied, e.g. Little Crake *Porzana parva* (Hastings Rarities 92–93), Scops Owl *Otus scops* (Hastings Rarities 277–278), Aquatic Warbler (Hastings Rarities 394–395), and various terns and sandpipers. If the 'pairs' were not natural occurrences, it is difficult to envisage a plausible alternative explanation that does not involve improbable expertise in the supply chain and wastage of excess specimens.

Nelder also drew attention to other anomalies that are more difficult to account for, such as the occurrence of multiple specimens of a rare vagrant. But this could have been due to small flocks arriving under exceptional weather conditions, e.g. the Black Larks *Melanocorypha yeltoniensis* (see below) or small flocks of Pine Grosbeaks *Pinicola enucleator*, from which four were shot in October 1905, two in March 1909 and three in January 1914. These numbers suggest some vagrants were formerly more common and Harrison (1971) quoted support for the patterns of irruptive behaviour in Pine Grosbeaks and Two-barred Crossbills *Loxia leucoptera*.

Many birders are unfamiliar with statistical tests and they were a novelty in 1962. Most readers would have been content to accept that Nelder had proved his point. But statistics measure the probability of a set of observations occurring by chance. To be clear, en masse the Hastings Rarities were never *proved* to be false, just improbably genuine. This may seem a pedantic distinction, but it is real. 'Proof' has been widely assumed and was explicitly claimed in a letter on *British Birds* notepaper: 'If you read our analysis right through I think you will agree that it has been proved that fraud took place' (I. J. Ferguson-Lees to Mrs W. H. O'Connor, 31 August 1962; Harrison Archives, Sevenoaks, Kent). Nicholson & Ferguson-Lees (1962) stressed they were not claiming that all of the disputed records were false, and later conceded that up to about 250 (c.46%) were statistically likely to be genuine (Nicholson *et al.* 1969). They clearly failed to communicate this at their press conference; nor did they consider the effect on the statistical analysis.

Was fraud actually feasible?

It is easy to allege fraud, but difficult to explain how it might have been carried out. The statistical improbability of all the contested records being genuine is matched by the unlikelihood of undertaking the alleged fraud and keeping it secret for decades. These points were ignored in 1962.

Bristow, or anyone else, would have needed agents to supply foreign birds from North America, North Africa and Eastern Europe / Central Asia). To avoid creating suspicion and wastage, they would have needed to select species rare in Britain but plausible vagrants. Frequent batches would have been required in order to have fresh birds in St. Leonards over a period of at least 30 years. The idea that they could have been imported alive and then shot (or otherwise killed) to be inspected 'in the flesh' is not credible.

Importing dead birds would have required refrigeration in transit. Mechanical refrigeration on board ship was first demonstrated as proof of concept in 1876 and began to be used commercially soon afterwards for importing meat (Capie & Perren 1980), but was not in regular use until the early 20th century (Moyer & Fittz 1932). The equipment was heavy and too bulky for domestic use. Efficient refrigeration, powered by compressors, was not portable on land or widely available during the early part of the era and could do little more than retard decay. Refrigeration machines could produce ice, but animal tissues contain salts that depress their freezing point below that of ice. They could not be 'frozen solid' as in modern deep-freeze facilities. Domestic refrigerators were unavailable until the 1930s and then were incapable of cooling much below c.4°C. Import 'on ice' (as alleged), especially in summer, or in refrigerated ships would not permit long-term storage. Cooling in a refrigerator (or ship's cold room) was sufficient to transport meat in fit condition to eat, and it is customary to allow chilled meat to 'hang' in transit. Preserving small birds (that thaw quickly) in a state suitable for skinning is a different matter as they decay rapidly, causing feathers and epidermis to 'slip', especially on the abdomen and around the eyes. Birds could be shipped on ice from the Middle East or America and arrive sufficiently fresh to market, at least in the colder months (Heath 1970), but such means of transport do not preserve objects for very long in a state suitable for taxidermy.

If the disputed birds had not arrived naturally, they must have been imported somehow. Nicholson *et al.* (1969) claimed that importation on ice was 'not an essential part of our case', despite having explicitly proposed it in 1962. In support, they reproduced a lengthy statement (>400 words) from a museum curator asserting that deep-frozen specimens could be transported and stored for long periods, yet remain suitable for taxidermy. This was misleading and irrelevant as modern deep-freeze facilities were unavailable during the era, yet there was an almost continuous supply of Hastings Rarities for 30 years. For Bristow to

perpetrate a fraud in the absence of such facilities he would have required regular deliveries and to have maintained the secrecy for decades. Importing birds, chilled to about 4°C on ice, was feasible but would not preserve them for long in a state suitable for taxidermy.

The most likely origin of suitable specimens was an established commercial source such as London's Leadenhall meat market. Foreign birds could certainly be obtained that way; other taxidermists did so (Bourne 1963) and the matter was extensively discussed (Aplin 1890). Collectors often visited markets in search of rarities and were aware of the opportunities (Collinson 2012) and the possibility of fraud. If using Leadenhall market, Bristow (or his agent) would have needed to avoid recognition by one of the collectors, all of them potential customers and also part of the gossip network represented by the BOC and personal friendships. Maybe Bristow sent someone on his behalf, or had batches delivered to him in St. Leonards, but the logistics involved would have been daunting, particularly to achieve frequent supplies, in summer, in secret, for 30 years. Nevertheless, evidence was published (Coombes 1970) stating that a ship's steward (Alfred Parkman) had imported birds from the Middle East and that his brother Sydney had delivered them to Bristow in St. Leonards. This was given national publicity by *The Daily Telegraph* (27 July 1970). Harrison (1971) subsequently established that Coombes' testimony was inaccurate and misleading. Delivery had not been to Bristow personally, involved just two birds, and occurred post-1930. The brothers publicly denied involvement with regular importation of birds and with fraud (*The Daily Telegraph*, 3 August 1970).

Could anyone acting for Bristow be trusted never to betray him through careless talk or grievance at not being adequately paid from the allegedly lucrative business? It is possible that Bristow could have added some imported birds to his stock, but why bother if they were turning up naturally? Any hint of dishonesty would have lost him his prime customers, for whom British provenance was of paramount importance. That it was possible for Bristow to obtain foreign birds is not evidence that he actually did so, repeatedly, for three decades and involving hundreds of specimens. Nor would it account for records of birds seen alive, or those that were not obtained by him but shot by others and retained by the collector. Nevertheless, they remain part of the implicit case against him.

Verification measures

To combat fraud, it was normal practice for rarities to be shown 'in the flesh' to an independent and respected expert, who could testify that the specimen was freshly dead and thus locally acquired. This procedure was applied to 283 of the 542 disputed specimens (52%). They were seen 'in the flesh' or freshly mounted by 11 local ornithologists, including the respected experts Norman & Claude Ticehurst. Two verifiers were medical doctors, others dedicated bird collectors used to handling dead birds. One (Thomas Parkin) was president of the local natural history society, another (W. Ruskin Butterfield) curator of Hastings Museum. Mullens was a respected naturalist, former Mayor of Bexhill, and Deputy Lieutenant of Sussex. Several had very extensive practical experience of handling freshly shot birds in the field. Twenty-two of the challenged specimens were inspected by two or more of these men. They knew each other, were well aware of the possibility of deception, and would suffer serious loss of face and social status if they erred or were shown to be implicated in fraud (see Table 3).

The verifiers looked for fresh blood, sunken eyes and stiffened toes, dryness in the eyelids and mouth. The epidermis and feathers 'slip' during decay, especially after thawing. The skin around the tarsi soon dries, making it difficult to mount a bird. Birds shot within hours of inspection would have appeared (and smelt) differently from any that had been cooled for a week or more on a sea journey. Fresh blood has a different colour and texture

TABLE 3

Local ornithologists who inspected half of the disputed Hastings Rarities 'in the flesh' (i.e. freshly dead) or recently mounted.

Name(s)	Number of specimens inspected
W. B. Alexander & N. F. Ticehurst	1
J. L. Bonhote & N. F. Ticehurst	1
W. R. Butterfield	89
W. R. Butterfield & L. A. C. Edwards	4
W. R. Butterfield & H. W. Ford-Lindsay	4
W. R. Butterfield & J. B. Nichols	2
W. R. Butterfield & M. J. Nicoll	1
W. R. Butterfield & T. Parkin	1
L. A. C. Edwards	6
L. A. C. Edwards & N. F. Ticehurst	1
H. W. Ford-Lindsay	93
G. Knight	1
W. H. Mullens	1
J. B. Nichols	6
J. B. Nichols, L. A. C. Edwards & N. F. Ticehurst	1
M. J. Nicoll	18
M. J. Nicoll & L. A. C. Edwards	2
M. J. Nicoll & C. B. Ticehurst	1
M. J. Nicoll & N. F. Ticehurst	1
T. Parkin	14
C. B. Ticehurst	7
C. B. & N. F. Ticehurst	2
N. F. Ticehurst	26
Total	283

to older blood. Could all of the scrutineers have been complicit in fraud *and* kept it secret for 30 years? Could they be duped 283 times without becoming suspicious? Would such prominent men have risked their reputations by publishing some of the records if they thought they were being duped? Several were customers of Bristow. By authenticating his allegedly foreign specimens they would be fooling themselves and enabling him to charge them higher prices for his birds.

Nicholson *et al.* (1969) questioned the character of two of these men, stating that Butterfield 'deliberately destroyed every record of the rarities when questions began to be asked', but the specimens are still in the Hastings Museum, so it is unclear exactly what was destroyed and what significance this might have had. They also questioned the ornithological competence of Ford-Lindsay (a local solicitor, disparaged as a 'stamp collector who dabbled in rare birds'). But identification was not his role. He was testifying only that specimens were freshly killed, on which issue Nicholson *et al.* (1969) appeared not to have questions. Ford-Lindsay and Butterfield were responsible for 186 of the verifications and this is concerning. However, many inspections took place in wartime, when limitations on travel would have restricted the availability of other scrutineers.

Michael Nicoll was one of the verifiers and personally shot some of the disputed birds. This might have made him more confident of the specimens shot by other people. Bristow did not supply Nicoll's birds and would have received only the stuffing fee, yet Nicoll's specimens remain as implicit evidence against him. Nicoll annotated his own copy of

Borrer's *The birds of Sussex*, recording his role in obtaining some of the Hastings Rarities specimens.

Could natural events account for the Hastings Rarities?

Weather patterns, where extreme conditions prompt the arrival of vagrants, might explain part of the area/era argument. Groups of birds can be swept over the North Atlantic by depressions, and prevailing westerlies often bring American birds to Britain. But the Hastings Rarities dataset comprised a list of records shorn of context. In isolation, many appear highly improbable, but it is worth considering the background to three of the most contested species. Snow Finch *Montifringilla nivalis* occurs in southern and central Europe and had never occurred in Britain. The species was deleted from the British List in 1962 on grounds of improbability, without reference to the events described by Ticehurst (1909). The details of Ticehurst's observations on timing and wind direction demonstrate that he was paying close attention to the circumstances in which he saw the freshly dead Snow Finch that Bristow brought to him. Snow Finch occurs as far west as the Pyrenees and is a vagrant as far north as Heligoland (Cramp & Perrins 1994, Slack 2009). Is it more probable that the species arrived naturally or that Bristow managed to import some, even during the wartime blockade of British ports during which three were recorded in 1916 (Hastings Rarities 540–542)? Records of Black Lark and White-winged Lark *Melanocorypha leucoptera* also coincided with extreme cold weather on the Continent and strong easterly winds (Ticehurst 1909), although that contextual detail did not prevent the relevant records being disallowed in 1962. In June 2003, a Black Lark was well documented on Anglesey (Degnan & Croft 2005). Subsequently, others from Yorkshire in April 1984 (Degnan & Croft 2005) and Norfolk in April 2008 (Offord 2008) were also accepted by the *British Birds* Rarities Committee. White-winged Lark was formerly more abundant, especially in the west of its distribution, and westward 'invasions' occurred in years when five of the Hastings records were made (Lindroos & Tenovuo 2000). Given the known extent of habitat loss in the steppes, the occurrence of both species during the era is not inconceivable, especially as Ticehurst's description of weather conditions at the time could have enabled their arrival.

Ignoring contextual details highlights the indiscriminate nature of the Hastings Rarities list, creating an inflated picture of improbability. This was supported by stories of other improbable occurrences (Nicholson & Ferguson-Lees 1962), but unlikely stories are not evidence, and have no bearing on Bristow's integrity.

Nicholson & Ferguson-Lees (1962) claimed that many records occurred at improbable times of year, but some were not implausible. For example, Aquatic Warbler is mostly seen in August–September (Thomas 2014), as were all five Hastings examples. All three Wallcreepers *Tichodroma muraria* were recorded in winter, when the species most regularly retreats from its montane habitat. Comments about some records being 'out of season' or not matching perceived migratory patterns implicitly assumes that seasons and bird behaviour are inflexible. But the Hastings Rarities were vagrants, by definition sporadic and accidental occurrences, especially in atypical weather conditions. Given the instability of weather patterns, why should vagrancy patterns apparent by 1962 be the same as half a century earlier?

The problem posed by World War I

The difficulty of importing foreign birds during the Great War was never considered. The war lasted from 28 July 1914 until 11 November 1918. One hundred and eighteen records, 21%

of all 595 Hastings Rarities (including ten seen alive), date from that period. They included oceanic birds, two North American species, and at least ten from Eastern Europe.

For import to Britain, birds needed to be refrigerated or packed in ice during travel overland and at sea. Was this feasible during a war that engulfed most of Europe? International trade was restricted, many ports and shipping routes were closed, insurance for ships was difficult (Russell-Smith 1919) and cargoes closely scrutinised. Shipping was disrupted and there were long delays at congested ports, a serious problem for dead birds on melting ice. In February 1915, Germany declared that all ships in British and Irish waters would be sunk on sight and even some from neutral countries were lost (Hoehling 1967). Yet 1914–15 witnessed the largest number of disputed records.

Minefields were laid and the German U-boat blockade covered most of the Mediterranean and all of the waters around the British Isles (Dixon 1917). Entry to British ports that remained open required a pilot due to restrictions on navigable channels. Would pilots help to import dead birds even in wartime? The suggestion in 1962 was indignantly denied (Harrison 1968) and no evidence was forthcoming. Even small vessels, such as the fishing boats that operated at Hastings, were subject to stringent controls and heavy penalties (Dixon 1917). Clandestine activity would probably have been minimal, and it is surely unlikely that anyone would continue to import mere dead birds. Despite this, in 1962 it was considered more probable that 118 birds had been imported in wartime than that they arrived in Britain unaided.

Wartime also compromised trade at Leadenhall Market, weakening the case for acquiring foreign specimens there. I have checked the superintendent's annual reports and they reveal a 97% decrease in meat tonnage from Europe passing through Leadenhall following the outbreak of war. It is difficult to reconcile this with the number of allegedly imported Hastings Rarities specimens during this time. Could Bristow, with remarkable prescience, have stocked up on imported birds before the war, kept them 'on ice' and released them for sale over the ensuing years? This would have meant storing >130 birds (given that some may never have been formally recorded), and four years later still being able to produce 14 to be authenticated as freshly killed on various dates in 1918. Without modern deep-freeze facilities this was not feasible.

Importing birds during the war was clearly compromised, so it is possible that the 118 wartime records (of 63 taxa) were actually genuine, including those seen alive. If we accept that possibility, then the list of 595 disqualified records is reduced to 477. Nicholson & Ferguson Lees (1962) proposed that, as one could not be certain which records were genuine, all of the records for a species within the area/era must be rejected. If we accept that logic, then why not the reverse, namely that establishing the veracity of one record of a species undermines the case for denouncing the remainder. By that argument the 63 taxa recorded during World War I (including those 'seen') could be deleted entirely from the Hastings Rarities, removing another 310 records from the list of rejections. Moreover, if we also accept that seeing live birds effectively authenticates dead ones that appear soon afterwards, eight more species could be reinstated, along with 53 of their associated records. Any one of these reasonable adjustments results in a much-reduced case of potential fraud that does not justify the highly publicised attack on George Bristow or the implication of incompetence on the part of the scrutineers who had agreed to validate his specimens. Accepting the above reductions still leaves >100 potentially fraudulent records, but in the absence of direct evidence to the contrary they are also potentially genuine.

Was Bristow fairly accused of fraud?

H. F. Witherby, editor of *British Birds*, wrote to Bristow in 1916 insisting that no further records of rarities would be accepted unless specimens were shown 'in the flesh' to Norman Ticehurst. In 1962 much was made of Bristow's failure to fulfil this requirement, and the observed decline in records after he was challenged in 1916. Despite the implicit accusation of dishonesty, Bristow responded courteously and at length. He explained his reluctance to comply fully with requests to identify his sources. Subsequently, he also explained why the number of rarities declined after 1916, pointing out that many of his suppliers had gone to join the war. This was dismissed as 'defensive' in 1962, then ignored, although the memorials in many local churches show significant losses for the small villages, supporting Bristow's assertion. Actually, many more able-bodied men would have been absent from the villages and countryside during wartime, not just those recorded as killed. Table 2 confirms that numbers of records also declined in the rest of Sussex (Nelder's YSB), supporting Bristow's contention.

If a lucrative fraudulent network had been established pre-war, the cessation of hostilities should have resulted in business picking up. In fact, the number of rare birds recorded continued to decline. There are plausible reasons for this, including increased efforts by the Royal Society for the Protection of Birds to enforce the legal protection of birds at Dungeness. The former bird collectors were also getting old and the collecting ethos was coming to an end as ornithology began to focus on ecological and behavioural topics. These issues were ignored in 1962, and the post-war reduction in rarity records was attributed entirely to Bristow's activities being curtailed due to his being 'found out' in 1916. In their editorial, Hollom *et al.* (1962) stated: 'The record shows that faced with the requirement that all new specimens should be submitted to [Ticehurst's] independent expert scrutiny the deception finally collapsed. Had he been able to examine evidence while it was fresh, he must have undoubtedly found what we have established now'. Despite this negative portrayal, Bristow in fact submitted birds for examination by Ticehurst on at least 33 occasions (Table 3). They were all rejected in 1962. Following intervention by Norman Ticehurst a single record of a White-spotted Bluethroat *Luscinia svecica cyaneacula* was accepted in an addendum to Nicholson & Ferguson-Lees (1962), but nevertheless remained on their list of rejected records (Hastings Rarity 384).

Accusations of profiteering

The motive advanced for fraud was explicitly financial gain (Hollom *et al.* 1962, Nicholson & Ferguson-Lees 1962), a suggestion emphasised at the 1962 press conference, although not a single example was cited of the transaction cost for any bird bought from Bristow, rare or otherwise. By contrast, Harrison (1971) recorded that he paid Bristow just ten shillings for what was claimed to be the first British specimen of an Audubon's Shearwater *Puffinus lherminieri* and the Maidstone Museum paid Bristow £18 for 28 birds in 1911 and 1920, or less than 13 shillings each.

The case for financial gain rested entirely on inference and hearsay. However, what people privately paid would not have been a matter for public record nor considered a subject for polite enquiry, especially among gentleman collectors. Relevant information comes from the collector J. B. Nichols, who recorded what he paid in a simple code (Morris 2006), for example 12/6d for two Red-footed Falcons *Falco vespertinus* (Hastings Rarities nos. 77–78) bought direct from Bristow. Many of Nichol's birds were absorbed into the Auden collection (now in Birmingham museum) and Nichols' costs are still legible on most of their labels. Forty-two Hastings Rarities cost him an average £2-11-6d each. This is more

than double the prices Bristow charged museums for similar material (Harrison 1968), confirming that he did take advantage of an eager collector. Sixteen non-Hastings Rarities bought from other taxidermists cost Nichols an average of 9/9d, although he paid Bristow £1 for an Alpine Ring Ouzel skin *Turdus torquatus alpestris* (cf. Hastings Rarities 348) in 1914 (now in Colchester museum). Fourteen birds in the Royal Museum of Scotland, Edinburgh, were bought from Bristow in 1913–14. They include 11 Hastings Rarities, costing on average 30 shillings each (Collinson & McGowan 2011).

It is fair to record that Bristow was probably making the most of his specialist clientele, but he charged less than half the (unsubstantiated) amounts suggested in 1962, when Nicholson was quoted as saying at his press conference that a rare bird could cost £25–30. Nor was there evidence of a competitive scramble to buy, as alleged. Instead, old collections reveal there were even more specimens of the disputed species passing through Bristow's hands than previously stated, suggesting that these 'rarities' were perhaps not so rare after all (or that he managed an even larger supply without being discovered).

If buying foreign birds meant extra costs, Bristow could not have made the alleged additional profits unless he charged higher prices. No evidence was provided in 1962 to show that this occurred. More significantly, avid collectors were becoming fewer. It is unlikely that profits from a diminishing band of customers would have supported a complex smuggling operation, and perhaps not even paid for frequent supplies from Leadenhall market.

Was the principal Hastings Rarities author prejudiced?

Opprobrium has been heaped on George Bristow, but what of the others in this affair? John Nelder (1924–2010) was an accomplished statistician, who developed many of the standard analyses commonly used today, a Fellow of the Royal Society, and a keen ornithologist. James Ferguson-Lees (1929–2017) wrote several popular bird guides, edited *British Birds* for 20 years and was a key figure in the ornithological establishment, but he was the junior partner in the 1962 paper (Moore 2012). The lead author was Max Nicholson (1904–2003), a highly respected senior civil servant and a pillar of the naturalist community. He had a lifelong interest in birds and was one of the chief architects of the British Trust for Ornithology, President of the Royal Society for the Protection of Birds, and Editor of *British Birds* (1951–60). Perhaps, as a senior civil servant, he had neither time nor freedom to write the Hastings denunciation earlier. The long delay in doing so was a complaint made by those who objected to his assertions being made so long after the events (Harrison 1962, Bannerman 1963: 394).

Despite his distinguished career, Nicholson was not always the dispassionate scientific enquirer that might be supposed. In his youth he expressed intemperate opinions regarding taxidermists, equating them with receivers of stolen goods and describing taxidermy as a 'mischievous occupation' (Nicholson 1926). He also attacked bird collectors, verbally and in print, and many of the rarity records he found implausible had been accepted by the journal of which he became editor. Some of his language in 1962 suggests deep-seated hostility. For example (Nicholson & Ferguson-Lees 1962: 321) 'The *great majority* [my italics], at least of the records, was in the shop of Mr. George Bristow', but listed only 209 out of 542 specimens as 'taken to Bristow'. Describing 38% as a *great majority* suggests a determination to lay blame. Similarly, it was asserted (p. 323) 'if, as we claim to have demonstrated, there is no reasonable possibility of the Hastings Rarities being genuine', but only improbability was demonstrated, not impossibility. It was said many times that 'Bristow had persistently declined repeated opportunities...', but he had simply not acted as instructed, perhaps because there was a war on. Bristow was accused of 'repeatedly evading' the need to show

his birds to Ticehurst, although he did so at least 33 times and to others on more than 200 occasions.

Discussing financial gain, with the implication of profiteering by Bristow, Nicholson stated in print (Nicholson & Ferguson-Lees 1962) and at the press conference that a stuffed Great Auk *Alca impennis* was worth £300, a totally irrelevant remark in relation to the Hastings Rarities but clearly intended to bolster his case against taxidermists. Nicholson asserted in 1962 that 'the Trinity of the casual gunner, the busy taxidermists and the wealthy collector ... formed the backbone of the system ... and the nexus between them was cash'. He made the same remark 50 years earlier using the same distinctive vocabulary (Nicholson 1926). It is difficult to escape the feeling that Nicholson had it in for Bristow and calling a press conference was a triumphal act to publicly expose the latter's guilt.

Bristow was relentlessly portrayed as devious and dishonest, but given no credit for his polite replies or the honest (and potentially incriminating) statement that he had once used refrigerated foreign birds. His detailed (and plausible) explanation for reluctance to identify all of his suppliers was described as 'deliberate suppression' of their names. But this was because certain birds were obtained illegally by his suppliers. Bristow also recounted his salutary experience of naming names. In fact, he did name some of his suppliers and assisted A. F. Griffiths (of the Booth Museum, Brighton) to contact them. A prejudicial tone was also evident when Nicholson *et al.* (1969) dismissively described James Harrison (a family doctor) as a 'skin collector', whilst referring to Meinertzhagen and Witherby as 'leading ornithologists' of reliable competence. Witherby's collection numbered 9,000 specimens, Meinertzhagen had 25,000 (Mearns & Mearns 1998).

There are other disquieting aspects to Nicholson & Ferguson Lees (1962). A map on pp. 332–333 includes 'The Crumbles', a coastal site within the area, but it is curiously excluded from the discussion and no mention is made of observations from within both the area and the era published by Arnold (1936) that do not support the case for fraud and were not associated with Bristow. After defining the 'area' as 20 miles from Hastings Pier, another species was added to the list (Great Shearwater *Puffinus gravis*, Hastings Rarities 18) from Shoreham, which is 43 miles away. When publishing a formal record, it was helpful to cite the nearest village, of which there were relatively few in the area, producing clusters of records around named places. It was explained that records 'near' somewhere were added to the total for that place, but the text deemed it 'suspicious' that so many records were associated with particular villages. This also overlooked that some place names served for whole parishes, thereby covering a larger area than just a village. Many records (31) were from St. Leonards, but it is neither surprising nor 'suspicious' that they were taken to Bristow, rather than to a more distant taxidermist. During the era it was customary for the identity of rare birds to be confirmed by shooting them. In a peculiar reversal of that principle, 53 sight records were declared 'unacceptable' because they were associated with suspect specimens. The logic is unclear, but including them augmented the number of allegedly fraudulent records, especially as some were counted twice—once dead and once alive (Table 1).

Conclusion

The claim in 1962 that a massive fraud had occurred has prompted wider scepticism regarding historical bird lists (Bourne 1963, Collinson 2019). Maybe we cannot believe anything now when considering early records for invasions by new species or investigating effects of long-term environmental change. Or maybe there was no fraud after all. Perhaps it was not necessary to import rare birds because they appeared naturally, as many species have done since, including Cetti's Warbler *Cettia cetti*, which was a class 1 rarity in 1962, but

is now commonplace. Perhaps time and place are crucial, and Bristow benefitted from being active in a particularly favourable area/era.

The arguments advanced in 1962 make a strong case for some deception having occurred, but it is not the clear-cut issue that many have come to accept. The proposed fraud, involving several continents and sustained in secret for 30 years, stretches credulity. It requires acceptance of improbabilities on a par with those highlighted by Nelder (1962). Moreover, the practicalities of importing dead birds for fraudulent sale were never considered, especially the difficulty of doing so during a World War, during which a fifth of the disputed records occurred. Nor was any evidence offered to support the central claim of major financial benefit, only ill-informed innuendo.

The stated aim of Nicholson & Ferguson-Lees (1962) was to protect the integrity of the British List by eliminating unacceptable records. Their principal critic was Harrison (1968) who sought to defend the integrity of Bristow. In their critique of his book, Nicholson *et al.* (1969) recognised that these were different issues. Protagonists of each approach were unlikely to agree as they were contesting two different things. The same is true of the present paper. Accepting the conspicuously large number of records from the area / era as genuine, despite their statistical improbability, means perpetuating uncertainty and suspicion, hence their proposed deletion. Rejecting them implies 'a serious suspicion that deception had been practised' (Nicholson *et al.* (1969), who then claimed 'We left it at that'. But they did not. They named Bristow, repeatedly. Their agnostic stance was clearly unacceptable at the 1962 press conference: if fraud had occurred, someone must have been responsible for it and only one name was mentioned.

Genuine specimens of rarities from the era confirm that Hastings offered a rich seam for vagrant hunters. The period 1890–1914 was a particularly active time for local people supplying a long-established taxidermy business with specimens, spurred on by collectors (local and from further afield) keen to obtain rarities and gain kudos by publishing their records. Far from 'setting the record straight', as claimed, the opposite may have been achieved.

Inclusion of birds 'seen' and many genuine records exaggerated the affair and the extent of the implicit case against Bristow, tainting the taxidermy profession. But many of the disputed specimens were not supplied by him, and others have plausible provenance data. If those specimens were genuine, the only reason why others that passed through Bristow's hands were not is that they were statistically improbable.

The demonisation of George Bristow was collateral damage of little public concern, but the case against him was absurdly exaggerated in the popular press and widely promulgated. Nicholson *et al.* (1969) made no attempt to repudiate the absurdly inaccurate press coverage they had received. Bristow has been blamed ever since.

It was asserted that the era ended when Bristow's nefarious activities were curtailed by Witherby's challenge in 1916. A plausible alternative explanation, offered by Bristow, and consistent with evidence, was ignored.

After so much time, the deleted records should remain as 'unproven' but George Bristow's alleged duplicity should be treated the same way. Without question, he did not perpetrate the 'massive' fraud portrayed by the popular press in 1962 and asserted many times since. Bristow was not responsible for all 595 records that comprise the Hastings Rarities, nor even the majority. The records with which he was explicitly associated were not all fraudulently supplied, and there is a possibility that none were. Nevertheless, some of the patterns of records highlighted by Nelder's analysis are troubling, although not inexplicable. The status of the Hastings Rarities and the role of George Bristow will remain controversial, especially in the minds of those who believe the case was settled in 1962. On

the other hand, Bristow just might have been conducting a largely honest business in the right place at the right time. Presumption of guilt is unjust.

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Address: West Mains, Ascot, Berks. SL5 7DG, UK, e-mail: pat.morris5@outlook.com

EDITORIAL COMMENT.—Pat Morris, while not denying that fraud may have underlain at least a subset of the Hastings Rarities, argues that the vilification of the taxidermist George Bristow for his purported role in the affair is unjustified based on available facts. The paper is a work of advocacy, re-examining issues that many British birdwatchers have assumed, or at least wished, had been settled decades ago. No doubt some ornithologists may wish to contest its conclusions.

The fact that John Nelder's 1962 statistical analysis of the almost 600 individual Hastings Rarities records yielded some clear improbabilities regarding the distribution of the specimens in space and time is not contested. Rather, it is the array of facts and suppositions underlying these improbabilities that are re-considered, especially with regard to the nature of the involvement of George Bristow in bringing many of the records to public attention.

Presumably because of the sheer number of records involved, which would make it a daunting task, no systematic attempt appears to have been made to re-examine the Hastings Rarities on a case-by-case basis, in the manner that most rarity records are now routinely assessed. While this is understandable, such reconsideration would nevertheless seem essential. In at least one other case where evidence has pointed to large-scale fraud, notably that involving the Meinertzhagen collection, gradual implementation of this course of action is enabling the data for some specimens to be designated as almost certainly valid and for others as almost definitely fraudulent, though admittedly with a third grouping, which for now remains enigmatic and thus must continue to be flagged as doubtful (e.g. Rasmussen & Prÿs-Jones 2003, Prÿs-Jones *et al.* 2019).

To lay the basis for such a review, it might seem desirable to attempt to determine the current whereabouts of those specimens comprising the Hastings Rarities. Whereas many are held in just a few collections, others have been widely scattered and some may have disappeared beyond trace. Reassessment on an individual specimen basis could then begin, using standard records committee criteria, and perhaps initially focusing on records in which Bristow is known or suspected to have played a role. This would clearly involve considerable input by a group of knowledgeable people who would need to feel the results potentially justified the time invested, but without it the possibility of further progress in elucidating the problems underlying the Hastings Rarities appears slight.

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