

The Guano Voyages

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Abstract This paper on guano stems from research into hop cultivation in Kent. Parliamentary Papers give fascinating accounts of voyages made during the nineteenth century to obtain this ‘wonder’ fertiliser. The efforts made on behalf of the agricultural community by naval officers and seamen were an important extension of rural history, and were considered vital at the time. The paper describes the effort that went into this cooperation between agriculture and the navy, as well as its global scope, at a time when agricultural chemistry was in its infancy. Although developments in chemistry would displace the need for guano within two decades, the desire for guano was then very striking. Naval personnel underwent considerable danger and physical hardship during these explorations to bring farmers the fertilisers that they wanted, and some features of this narrative are explored here.

Guano, sea-bird excrement, is a fertiliser that was used by hop and other farmers during and after the second half of the nineteenth century. It is possibly the least exotic object of a quest imaginable; but in the mid-nineteenth century that is what it became. Royal Naval officers and seamen travelled long distances, at considerable personal hazard, extending the Empire in search of this fertiliser, and merchants also became involved. Government records for the mid nineteenth century provide a fascinating insight into the feverish searches for guano, at a time when trading still entailed considerable risk.¹

In the mid-nineteenth century relatively scant scientific knowledge underlay the application of manures, fertilisers and farming practice generally.² Experience was the essence of good judgement, and agricultural chemistry was in its infancy.³ The fertilisers then used, such as farmyard dung, pigeon dung, feathers, town manure and latterly shoddy (rags from the cotton industry), were mostly organic and slow-acting and had been applied for centuries.⁴ There was, however, much desire for improvement. Farmers and landowners sought new methods, and in 1838 the Royal Agricultural Society of England (RASE) was founded with the aim of improving agriculture by the ‘application of science, agricultural experimentation and the generation and communication of agricultural information’. The Society ‘pioneered agricultural consultancy’, and from 1849 offered its members the services of a consultant chemist to analyse the content of purchased fertilisers and feedstuffs, which were sometimes adulterated. Professor J.T. Way, the second holder of the office, also advised the Naval searchers who took part in the ‘Guano Voyages’.⁵

Bones and bone meal, habitually bought and used by farmers for soil improvement since 1815, were found by 1840 to be ineffective on clay and heavy soils. John Bennet Lawes conducted experiments on his estate at Rothamsted in the years after 1836

decomposing bones with sulphuric acid to create the superphosphates which would remedy this. The 1840s thus saw two major innovations for the improvement of crop yields: the marketing in Britain of guano in 1841; and in 1843 the first sales on a commercial scale of Lawes' superphosphates. Within ten years a number of firms sold artificial fertilisers. Exports, including some re-exporting of guano, continued from the 1860s until the 1890s without serious foreign competition.⁶ By 1895, Lawes and his associate, John Gilbert, had established Rothamsted as 'the foremost school for agricultural research'.⁷

Guano and superphosphates were the pioneers of the faster-acting artificial fertilisers which were increasingly applied after 1850, usually as summer dressings.⁸ Guano, 'the Growmore of its day', could increase some crop yields significantly. Its immediate success, aided by vigorous advertising, both increased the uptake of bought fertilisers and enhanced acceptance of the superphosphates, which acted in a similar manner. Guano, an organic manure needing no manufacturing process, was numbered among the 'artificial' fertilisers by contemporaries, because it did not originate on the farm. United Kingdom consumption of it grew from nothing in 1840, to 'over 199,000 tons per annum in the mid 1840s . . . to a peak of 230,000 tons in the late 1850s'.⁹ In 1872–6 annual consumption was 115 tons, in 1897–1901 24,000 tons, and in 1912–13, 20,000 tons.¹⁰ Guano and superphosphates were both used successfully on wheat and root crops, especially turnips.¹¹

Hops and guano

Guano was a 'balanced fertiliser . . . containing perhaps 24 per cent phosphate, 17 per cent ammonia [a source of nitrogen] and 4 per cent potash'.¹² It suited the hop, a 'heavy' and 'an all-round feeder', which needed 'a well-balanced ration of phosphates, potash and nitrogen', but, as will be shown, the quality of guano was variable and its constituents could be adulterated by rain.¹³

The delivery of correct quantities of nitrogen to the hop at the right time of the year caused the most difficulties.¹⁴ It was traditionally slowly released through winter dressings of dung, whose bulk also maintained a soil structure where hop roots could develop freely. Now, however, quicker-acting guanos and phosphates could supply up to half the requirement later in the year, providing a stimulus closer to the harvest season.¹⁵ Although hops 'show[ed] a marked response to nitrogen', too little of it would stunt growth, and too much resulted in excessive bine and leaf production, with consequent vulnerability to fungal diseases.¹⁶ Samuel Rutley received guano with joy in 1848, writing that its introduction 'has been a great boon to the hop grower . . . giv[ing] him the power at pleasure of rapidly restoring vigour to his bine if not counteracted by disease or blight'. Within a decade, however, such forcing of large crops of hops was judged to diminish their quality.¹⁷ The problem really was insufficient knowledge of plant nutrition and of how best to apply the choice of fertilisers that became available.¹⁸ Parker says that 'very little experimental work on hop manuring was undertaken before the close of the century', and 'considerable . . . injudicious manuring' occurred before then.¹⁹

However, guano was a recognised growth-stimulant.²⁰ Hop growers valued it chiefly for its content of ammonia (and hence nitrogen), and continued to use it throughout the century, even though their approach was based more on experience than science, and they

may not have known the exact proportions of nitrogen and phosphates that the different kinds contained. 'Ichaboe', for instance, was a guano from the island of that name off the south-west coast of Africa which began to be imported in the early days of the guano trade before 1852. Ranking as an intermediate guano and containing an average seven to eight per cent ammonia, it lay in the range between the most valuable ammoniacal guanos (like the Peruvian, with seventeen per cent ammoniac content) and the far less prized phosphatic guanos, like the bottom-of-the-range one from Saldanha Bay, with only three and a half per cent ammonia.²¹

Ernest Wickham of Combourne farm near Goudhurst in Wealden Kent was one hop farmer who used guano along with other manures in the late 1890s. Of 126 tons and fifteen hundredweight of manure bought between November 1897 and October 1898, approximately 13.38% was guano. About half of that was Ichaboe, but by 1901, Wickham was using the more expensive Peruvian variety.²² How much he and other hop growers knew of the frantic hunt for guano in earlier years can only be conjectured.

The early guano trade

Britain's first guano trading was with Peru. It began in 1840, as a simple trading operation between a Peruvian and the Liverpool firm of William Myers and Company.²³ Peruvians had long used their 'very superior' guano as a fertiliser, and British chemists recognised its high nitrogen content early in the century, long before the commerce began.²⁴ At the start of the trade, it was by no means certain that British farmers would wish to supplement their own farmyard manure, nor that guano would become so popular by mid-century.²⁵ From 1850 until sales peaked in 1856, however, guano 'occupied a dominant and commanding position in the fertilizer market, and was widely acknowledged to have become a vital element in British agricultural advance'.²⁶

Publicity fuelled demand, but farmers wanted supplies of guano at a reasonable price.²⁷ The Peruvian government's monopoly, which included the power to rescind contracts with British importers at will, prevented the development of these cheap supplies.²⁸ As early as 1842, merchants had begun to look for sources of guano which would be free from restriction. Ichaboe, the 'barren rock' where guano lay 'for the taking' was one such discovery. Its guano was less nitrogenous and so less valuable than the Peruvian, but a very substantial trade in it was conducted from 1842 until early 1845, when supplies ran out.²⁹ The Ichaboe which Ernest Wickham purchased in the late 1890s would have come from the sporadic collection by ships of fresh deposits there.³⁰

The voyages

The searches instigated by Parliament began in 1844. On 8th July the Admiralty sent a low-key despatch to Commanders-in-Chief of ships 'at Halifax, Hong Kong, the Cape of Good Hope, Rio de Janeiro, and Sierra Leone'. Incorporating a map of areas where guano had been, or might be, found, it directed those in relevant vicinities 'to examine, and give such information upon the subject as they may be enabled to collect'.³¹ Eight years passed. The next instruction issued on 10th June 1852 was more compelling. Times

had changed, and guano had become an essential fertiliser. Now naval officers must 'lose no time in communicating the existence of any guano . . . for the information of the Royal Agricultural Society in this country'.³² The farming community was up in arms. Farmers, concerned in 1851 by receiving the lowest prices for their wheat since 1780, had long felt that guano was too expensive, although in fact it remained at a stable 'minimum wholesale price of £9.5s.' a ton between 1849 and 1854.³³ Mathew says that 'Agricultural depression both stimulated the desire to use guano and impaired the capacity to buy it'.³⁴ In 1852 farmers' discontent culminated in protests and a demand for Parliamentary action about the high guano prices perceived to emanate from the Peruvian monopoly.³⁵

The farmers' vociferous champion was the Duke of Richmond, a founder of the Royal Agricultural Society and 'an active defender of the agricultural interest'.³⁶ His guidelines, enclosed with the instruction of 10th June, reinforced the urgency of the naval mission. They explained that the best guano lay only on shores where there was 'little or no rain', usually in desert regions, such as North Africa and Arabia. Because such areas had been little surveyed, evidence of its presence came chiefly from whalers, explorers and the like 'who coasted along these inhospitable regions'. As the 'use of guano [was] unknown in England until lately', existing surveys, not primed to look, might well have missed it.³⁷ Thus it was 'highly important that all the inlets and islands . . . be carefully surveyed' and that 'the attention of all captains and officers employed in the tropical regions, or in surveys in different parts of the world' be focused on this endeavour. They were told to 'report upon the existence of seabirds in large quantities . . . and survey their haunts, where practicable'. The Duke proposed, too, that new sources of information might be attracted if the Royal Agricultural Society were to offer a prize for the best essay on the 'geographical distribution of guano', outside Peru.³⁸

This rider was because the government now faced the beginnings of a trade war. The Peruvians and Bolivians who held the best guano had become aware of its commercial value, and Britain was by no means the only nation seeking it. Word went out that 'the supply of Peruvian guano upon lower terms is an object of national importance', and, to this end, 'it is of the utmost importance that supplies of guano . . . be obtained from other quarters'.³⁹ Naval despatches display the concern felt about foreign competition. In May 1851 the 'discovery of guano in Shark's Bay . . . Western Australia . . . attracted a . . . number of vessels, no less than 4,000 tons of shipping', a gathering which induced the governor to request the protection of 'a small man of war' lest convicts should seize the boats and attempt to escape.⁴⁰ The *Calliope* answered the call, but a year later its captain reported that what little guano had been found was now 'all gone', and that the troops guarding it had been withdrawn.⁴¹

The ideal was to discover plentiful guano upon an unpopulated island which was not in thrall to another foreign power. An Admiralty memorandum of 18th January 1853 directed ships' officers to 'use their best endeavours, on every occasion, to discover any unoccupied islands from whence guano may be freely obtained by British merchantmen'.⁴² The small uninhabited island of Aves, near St Croix in the Virgin Islands, appeared to qualify. On 25th August 1854, Commander Horsey of H.M.S. *Devastation* estimated that 200,000 tons of guano, 'but slightly inferior' to the Peruvian variety, lay there; sold in Britain at '£7 per ton . . . [it] would be worth one and a half million sterling'. Unfortunately

three American vessels were already loading it up.⁴³ Letters were exchanged between the respective governments. In December Britain declared that it would not 'interfere with' United States' nationals loading guano from Aves; meanwhile the American government refuted any 'intention to claim dominion' there. As it turned out, the threat came from another quarter, for in March, Venezuela took possession of Aves. The British government speculated upon the expediency of stationing a 'ship of war' there, ostensibly to ensure freedom of trade for all. In the end it did no more than send a strong protest to the Venezuelan government. The British considered that they had the strongest claim to Aves, through having surveyed it, and because it was nearer to their island possessions of Nevis and St Christopher than to Venezuela. However Venezuela might successfully justify the takeover on 'grounds of being the first occupant', and finally the government did not dispute her '*de facto* occupancy' other than to maintain British trade rights.⁴⁴

For the men engaged in locating guano, the task was neither easy in terms of the physical dangers to be undergone, nor simple when it came to recognising the 'right kind' of guano. The islands explored were often very small. Al Hasikiyah (Haski), in the Kuria Muria group off south-east Arabia, measured only one by one and a quarter miles, and the exploring captain reported that 'the squalls came off very sharply, and the sea was scarcely broken by such a small body of rock. The swell rolled round on both sides, making a heavy surf on the rocks. There was no beach, and all landing, or even lowering a boat in such weather was out of the question'.⁴⁵ As Sawda (Soda) another island in the group, three miles wide, was expected to provide shelter, but, 'when [the ship was] under the lee of the high land, the squalls were furious and without intermission, knocking up the spray like a whirlwind, and with such force as to endanger the springing of the lower yards. . . . There was no hope of effecting a landing. . . . nor would it have been safe or prudent to have anchored in so wild a spot at this season'.⁴⁶

Lieutenant Parkin of H.M.S. *Portland*, 'agreeably to your [his captain's] orders', was at least able to land 'on the rocks in a small cove' on the north of St Ambrose island [in the Pacific Ocean, off Peru] 'without difficulty'. His report states:

I . . . made the best of my way to the top by scrambling up a gully and the face of a cliff. The ascent is not easy, and in some places dangerous, on account of the nature of the rock (decomposed lava), and also it being almost perpendicular. I did not see the least sign of guano on the top of the island.

Continuing through the 'euphorbious shrub and heath', he climbed down a 'dry watercourse', only to find his way blocked by a 'perpendicular cliff', an experience repeated when he tried to descend to sea-level from another location. He returned to the boat eventually, and 'not without great difficulty', by his outgoing route. Although one of his men found some 'small deposits of a light guano' and another discovered 'a small stony beach in a pleasant boat cove', this island could not provide what was sought.⁴⁷

Explorations were often fruitless, due to the inadequacy of either the quality or the quantity of the guano. The expense of transportation was always a factor in the equation. As J. Thomas Way, Consulting Chemist to the Royal Agricultural Society, explained in his paper on guano prospecting of 11th June 1852 that 'special attention' had to be given to 'the facilities which may exist for getting the manure on board ship'.⁴⁸ On some of

the islands the difficulties of landing rendered costs prohibitive, unless the deposits were very large and/or of excellent quality.

Much of Way's paper was taken up with ensuring that the naval explorers were able to report intelligently upon their findings. As already explained, the ammoniacal variety of guano, which released animal matter to the soil during its breakdown, was vastly more valuable than the phosphatic kind. Whatever the value, none could have been pleasant to handle or to have aboard ship, but those containing the most ammonia were the most foul-smelling. Way said of Angamos guano, 'chipped off the face of Bolivian rocks', that its 'odour . . . is offensive, strongly resembling that of putrid urine'. This, 'the most ammoniacal and most valuable' variety, was recognisable by its 'whitish drab colour, very dry and friable, and splitting into thin layers' and sometimes incorporating bird feathers. The Peruvian kind smelt 'less offensive, and more ammoniacal than putrid', and was a buff shade, changing to brown by exposure to moisture, while the intermediate sorts, such as Ichaboe, would usually be a darker brown with 'much less smell' of an 'earthy [rather] than an animal character'. In general dry places harboured the guano with the most ammonia. The wetter the venue, the more phosphatic and less valuable was the guano, for rain gradually removed the ammonia from it.⁴⁹ Thus the expedition to the Falkland Islands in October 1853 was probably doomed from the start, because here there was damp and swampy land surrounding what turned out to be large quantities of, predictably, 'not very good quality' guano.⁵⁰ However, some of the poorer types were still considered to have a 'high value for turnips'.⁵¹

The Kooria Moorja Survey

It is instructive to follow the course of the survey of some of the islands in the Kuria Muria (formerly Kooria Moorja) group in an instance where entrepreneurial optimism, and perhaps interests in high places, outweighed the judgement of the surveying captain, with alarming consequences for John Ord, the merchant seeking to trade in guano. Ord, the 'master of a merchant-ship' out of Liverpool, had noticed the guano on a chance call to the islands in 1853, and was urging British occupation of them, with a guano-removal lease for himself as recompense.⁵² The group lies close to the southern coast of Arabia, in the Arabian Sea just outside Kuria Muria Bay at 17.30N 56.00E. It consists of five islands, Al Hallaniyah (Helaaneen, the largest island), Al Hasikyah (Haski), Al Qibliyah (Jibleen), As Sawda (Soda) and Gharzaut (Ghartoud). The bracketed island names are those most frequently used in the Parliamentary Papers upon which this account is based, and I have used them too, but spellings vary.

On 18th February 1854, Captain Stephen Freemantle of H.M.S. *Juno* received orders to 'closely survey [the Kuria Muria islands] nautically, and . . . minutely investigate the deposits of guano said or supposed to exist in them'. Ord was to 'serve at the outset as his best guide, since from Ord our principal information as to the guano therein existing is derived'. The guano's quality had to be tested 'as accurately as . . . practicable, and compared with samples of the best Peruvian guano', which the Captain would take with him.⁵³ It was apparently standard practice for the surveying ships to carry samples with which to compare their finds.

As the islands belonged to the Imaum [sic] of Muscat, Freemantle was also ordered to negotiate with him for their transfer to the British Crown.⁵⁴ This Imam was the elderly Seyyid Said, ruler of Oman from Muscat since his youth, who came to love and spend much time in Zanzibar in East Africa, and who in 1840 formally made it the capital of his realm.⁵⁵ He had a sometimes turbulent career, but trading was his main interest, and one of the reasons for the move to Zanzibar.⁵⁶ A relationship of deep friendship and trust developed between himself and Major Hamerton, who had been British Consul at Zanzibar since 1841, and whom Freemantle would meet there.⁵⁷

Stephen Freemantle began his mission by calling at Zanzibar on 20th June 1854. As the Imam was absent, 'visiting his dominions at Muscat', Hamerton provided Freemantle with an explanatory 'letter in Arabic' to take there.⁵⁸ On government orders, guano was never mentioned, so that Ord's interests could be protected. But, as Hamerton later informed the Foreign Office, Ord was not the first finder of guano on the Kuria Muria islands; Arabic, French and other traders had removed guano from them for many years. The Imam would have known their value, and without doubt understood that the ostensible 'coaling-station' was not the true reason for the desired transfer.⁵⁹

Captain Freemantle decided to survey the islands before travelling to Muscat, and set off to do that in the company of Ord and an Arab interpreter. His letter of 18th July to the Earl of Clarendon reports that 'A strong and fiery monsoon run us up in eight days, and at daylight on the 3rd of July we made . . . the south-west of Kooria Mooraa Bay'. This seasonal bad weather made it impossible to land on Haski, Soda or Jibleen, but birds frequented all three islands, and on Haski, 'guano was very conspicuous'. A landing was achieved on Helaaneen, but not without trouble: 'Having passed the high bluff, the squalls came down very heavy . . . it blew a fresh gale all the time we were there . . . A heavy surf on the beach, and the landing difficult everywhere, except in a sandy cove . . . pointed out to us by the natives'. The Captain and his party made an exhaustive search for guano, but found no trace of it in the north-east sector. Freemantle would not give up, and he and twelve officers, equipped with food and water, walked seven miles to the island's far end, a journey which took them four and a half hours. Again, there was no guano; no trees grew, and the handful of inhabitants told them that no birds visited. Stephen Freemantle judged the place to be 'difficult of access, and destitute of guano'. No more could be accomplished at that time, and he set sail.⁶⁰

July 12th found him in Muscat making his representations to the Imaum, who received them readily. Freemantle was greeted by Said with 'marked attention, and with the courtesy and affability of manner which characterised his intercourse with English people'. An affirmative answer was immediately given in terms 'most flattering to Her Majesty and to . . . Her Government'. Indeed the Imaum went so far as to say that, should the Queen require 'any other portion, or the whole of his dominions . . . he should be equally cheerful to surrender them into her hands'.⁶¹ Coupland writes that Freemantle apparently accepted this willing relinquishment of the islands at face value, but Coupland himself, agreeing that Said 'yielded the favour . . . without hesitation', yet wondered 'whether or not he wished that his British friends had not asked for it'.⁶² Seyyid Said refused the five to ten thousand pounds which the government authorised Freemantle to offer. He continued to refuse all further offers of recompense made through Major

Hamerton, after the government, uneasy at the deception, revealed its guano interests in Kuria Muria. Coupland says that in the end ‘all that Clarendon [Foreign Secretary] could do to ease his conscience was to send him a snuff-box as a token of the British Government’s appreciation of his readiness to comply with its wishes’.⁶³

It is a matter of conjecture whether the islands were ceded because Said did not want to lose face, or genuinely did not mind their loss. He was a successful man who had ‘made Zanzibar one of three or four focal trade points in the Indian Ocean’, and was near the end of his life, dying in 1856.⁶⁴ Stephen Freemantle, at any rate, had accomplished one part of his remit. Within a few days, after an exchange of flowery compliments, and a banquet for the captain and crew of the *Juno*, he was placed in charge of the transfer of the islands to the Queen.⁶⁵ He marked the Imaum’s departure from Muscat by ‘manning yards and saluting as he passed the *Juno*’. He then planned to return to Helaaneen to ‘take formal possession of the islands in the name of Her Majesty’ and plant a flagstaff. He decided he would leave two natives, employed at a ‘trifling salary’, in charge of a ‘Union flag, which they will be instructed to display on the arrival of any vessel’. But he was well aware that his mission was not fulfilled, for he writes: ‘as the monsoon relaxes its strength, [I will] . . . seize the earliest opportunity of examining those islands which contain the guano, for as yet we have ascertained no other corroboration of Ord’s statements than that afforded by the oral testimony of the inhabitants of Helaaneen, and . . . the actual object of this expedition remains to be accomplished’. He reckoned it would take about three weeks to ‘beat back to Helaaneen against the monsoon’ after which he would continue the survey.⁶⁶

On 13th September he came again to Haski, and landed there ‘with . . . 70 . . . officers and men’ whom he deployed so as to examine the whole of the island:

The result was far from satisfactory: there did not appear to be any trace whatever of recent deposits, nor any indication that birds frequented the island in any vast numbers. The surface was principally hard granite rock, and perfectly bare.

To the north were gullies with ‘a general diffusion’ of ‘inferior’ guano, but the quantity was ‘inconsiderable’; and, averaging only two feet in depth, contained many stones. In the south lay a ‘different species’ of guano, but, wrote Freemantle:

I fear, from the report of the test, that it is of little value, and would not pay the expense of importation. The gross estimated quantity might, perhaps, approach 40,000 tons, of which at least 50% would be insoluble matter. The labour, expense, and inconvenience which would be entailed . . . to load any guano from Haski, is a weighty consideration: the inequality of the ground, and the distance . . . necessary to carry the bags, after the stuff had been screened and sifted, and separated from the stone, would require a strong party of labourers, subsistence for whom . . . including water, must be brought to the spot.

Taking into account the ‘insignificant’ quantity and ‘inferior’ quality of the guano, he concluded that, from ‘a national point of view [Haski is] absolutely worthless’.⁶⁷ Despite this quite damning report, Haski would be the island upon which Ord began his ill-fated venture.

Stephen Freemantle’s visit to Soda island was equally fruitless, and after a three-day search, he went on to Jibleen, ‘the island which Mr Ord had himself visited superficially, and on which his expectations were mainly grounded’. This was an island similar in size and terrain to Haski. Again, no trouble was spared: ‘Three or four strong parties were

landed, and the island subdivided into districts, so as to conduct the search minutely and . . . obtain as accurate a survey as possible'.⁶⁸ But 'on all the plains guano was found dispersed in irregular patches . . . varying as to colour and quality, there was no *bona-fide* mass of the real stuff anywhere discovered to encourage the hope that any extensive trade could be carried out'.⁶⁹ The quality of the guano was 'doubtful . . . compared with the samples of Peruvian and Ichaboe' and the Captain and his aides were united in the opinion that 'the expense of shipment and freight to England' would not be covered.

Overall, Captain Freemantle considered the Kuria Muria islands of little use as suppliers of guano.⁷⁰ This was partly because of landing difficulties and the cost of removal. Helaaneen, the only island with freshwater supplies and an accessible, all-year anchorage on the north-east side, unfortunately had no guano.⁷¹ Furthermore, climatic conditions were not favourable to the accretion of worthwhile deposits:

For at least three months in the year, a strong and fiery breeze blows incessantly over the island [Haski, but the comments are applicable to all islands in the group]. . . It would appear that the deposits get washed away and blown off: and although the subsoil (where there is any) is strongly impregnated with fertilizing matter, there is no bulk of genuine guano to furnish cargoes for a number of ships, or any good prospect of remuneration for any parties engaging in the speculation.⁷²

There could scarcely have been a stronger indictment of the trade prospects. Yet, 'notwithstanding the unfavourable report', Ord remained anxious to proceed. In December 1855, Lord Clarendon recommended that he be allowed a lease the terms of which included the payment of royalties to the government.⁷³ In March 1856 Ord and his associates, Messrs Hindson and Hayes of Liverpool, were granted a five-year lease to remove guano from three of the islands ceded to the Queen, namely Haski, Jibleen and Ghartoud.⁷⁴ Ord's venture had begun. There was obviously some anxiety about safety, as both he and Lord Clarendon asked for a Royal Naval vessel to visit the islands in the autumn to see how things were going and to afford protection if needed.⁷⁵ The operation would, after all, take place on tiny islands accessible only as the monsoon winds diminished. Work began on Haski, which had a minute native population, so Ord brought in outsider workers from Aden, some thousand miles distant by sea.⁷⁶ But protection was refused because few ships of war frequented those parts, and the navy was thus unable to 'undertake . . . general superintendence of the settlers, or natives'. However, the possibility was ceded that a ship from the East India Company might visit instead.⁷⁷

What happened next is told in a letter from John Ord to his partners in Liverpool, and passed on by them to Member of Parliament H. Labouchere, in December 1856. It is dated, 'Off the Island of Helaaneen, 23 October 1856', and begins:

It is my painful task to inform you, that in consequence of the British Government not having rendered the protection they promised us, that myself and party have most narrowly escaped being murdered by a large band of armed Arabs, and that in consequence our guano project has been broken up, and I am now about to proceed to Bombay with the 'Bleng' and 'Philip Dean'.⁷⁸

He describes the attack and preceding events in the following words:

On the 22nd instant, at 5 a.m., Mr Smith [overseer of the work party] was occupied with 20 men upon one of the plains of Haski, a mile distant, collecting guano, whilst myself and Mr Belshaw,

with 10 men were . . . settling our quarters, my tent was suddenly surrounded by a band of about 150 armed Arabs, who demanded to know our business there.

Ord explained the changed ownership of Haski, but the explanation was not accepted, and he writes that the Arabs:

Imperatively demanded that I should quit the island in one hour, or we should all die. I cautioned them against any act of violence, and, that if one English life was taken, the English Government would visit them with fearful retribution . . . though I was prepared to repel them, I would not be the first aggressor.

Notwithstanding this warning, and an offer to withdraw while the matter was investigated, 'They demanded that I should commence putting into the boats forthwith, or abide by the result'. A messenger had been sent for Smith, who 'now joined me with his 20 men'.

The party's 'big guns [were] not yet . . . mounted on shore' and the ship which had brought them lay three miles distant, its commander ignorant of the events on land. It must have seemed a perilous situation indeed. Ord now offered to leave if the Arabs would stand off, and, somewhat surprisingly, they withdrew, leaving a guard to watch. John Ord then 'took a boat load of the most valuable things to the ship . . . and commenced shipping off as fast as possible'. By now convinced that his attackers were pirates who would shortly return with reinforcements, he says that 'The work was pushed, and in 38 hours everything was re-embarked, and we proceeded here for water'.⁷⁹ Ord continued:

We sail . . . this evening, or in the morning, and Mr Smith starts this evening for Aden, who will be the bearer of this sad intelligence . . . I must now dispose of all the stores at Bombay to the best advantage . . . and . . . return to England, where I hope we shall be able to obtain redress from the Government. I trust that you will see that I have adopted the only alternative I had left, and that it was the most prudent step I could take.⁸⁰

The unfortunate Smith would undergo a less comfortable voyage than his employer. The Aden workforce had to be taken home, and, since the *Bleng* and *Philip Dean* were contracted to go to Bombay, Ord writes that:

I have no alternative but to send Mr Smith in two open boats, with 29 men to Aden (a distance of 700 or 1,000 miles) . . . for which service he has nobly volunteered . . . [A] trustworthy interpreter . . . accompanies Mr Smith, and he is abundantly furnished with provisions and water'.⁸¹ Of the 'excellent band of fellows' whom Smith was transporting, 'two or three . . . were sick, one of which . . . [Ord] fear[ed] would die on the passage.

Ord wrote from Bombay on 17th November to his partners in Liverpool, 'I hope that Mr Smith will have arrived safely at Aden, and is now on his way home'.⁸²

John Ord did not in reality have very much concern for his workers' welfare. On occasion he and his staff 'knocked [them] . . . about with fists and sticks', and they were so badly cared for on these islands with poor shelter and insufficient fresh water, medication and medical advice, that in the 1858 to 1859 season 'the death rate among the labourers was terribly high'. Seventeen of the Aden workmen died in that season, and the remaining thirty returned home 'enfeebled and useless'. Ord's record was such that three government warnings were issued.⁸³

Ord's letter from Bombay conveys a very different view of the prospects for guano trading on Haski than that of Captain Freemantle's report. Ord was, of course, writing to those as committed as himself to the project's success, and was anxious to obtain Royal Naval protection for its continuation, and to make a case for government compensation. He says:

We shall surely have a claim upon the Home Government, not only for loss in outlay, but also loss in guano: for the Arabs have already carried off thousands upon thousands of tons from . . . Haski alone, and are still doing so. They now know the use of guano as well as we do, and use it very extensively. I was astonished on landing . . . to see the beaten tracks in several directions and places from which large deposits of guano have been removed. A few years ago the Arabs were in the habit of collecting only the deposits of the last season, but now their eyes have been opened to the value of the old dark deposits; they never before had the idea of looking under the stones for rich guano.

Of the work party, he writes:

I was much pleased to see the way in which they commenced working the guano on the morning of the day we were obliged to re-embark. Smith, with 20 of them, started at daylight for the plain where the dark deposit was, and by seven o'clock a.m. the stones were cleaned, and about 23 tons sifted and ready for shipping to the 'Philip Dean', and we should have had both vessels loaded and despatched with first-rate cargoes in less than a month.

Ord brought out twelve samples, whose analysis had proved 'most satisfactory', with some 'very strong in ammonia'. He considered it 'shameful' that his venture had failed for lack of promised Government protection, and vowed to return 'if the Government . . . will grant me a ship of war'.⁸⁴

His wish was granted. On 2nd June 1857 Commander E.H. Vernon of H.M.S. *Cordelia* was ordered to the Kuria Muria islands 'to protect vessels loading guano', Ord, Hindson and Hayes having obtained 'exclusive rights to export guano' from three of them. In any dispute between them and other traders or Arabs, the Commander was to try 'to effect an amicable settlement, avoiding, if possible, a recourse to any coercive measures against the Arabs'. The *Cordelia* was to stay as long as 'absolutely necessary for protection'.⁸⁵ But there was no trouble; the *Cordelia* left in the autumn, returned briefly at the beginning of 1858, and made her final departure from the islands in June 1858.⁸⁶

Agitation from the farming lobby about the granting of a monopoly which could leave guano prices as high as they were under Peruvian ownership was calmed. The government justified granting exclusive rights on the grounds of Ord's 'discovery and the speculative character of the enterprise', and of his 'pledge . . . to sell the guano by auction in the open market'. Their assurance that 'further exploitation of the guano would be effectively protected' was accepted, and the furore died down.⁸⁷

Conclusion

So ends this tale of guano exploration, leaving questions in its wake. Did Ord's consortium make a success of it, or was Captain Freemantle's opinion upheld by events? In 1857, Ord and Company reported the quality of Kuria Murian guano to be 'almost as high as that of [the] Peruvian', although they modified this opinion 'on closer acquaintance' as

'seem[ingly] too high'.⁸⁸ However, Mathew's thesis throws doubt even on this revised estimate. He reports that J.C. Nesbit's analysis in 1856 showed these guanos to 'be among the lowest quality . . . containing little more than earthy phosphates', and goes on to say that 'Much of the Kuria Muria guano was in fact used in the manufacture of superphosphates'.⁸⁹

While Ord and Company estimated Haski's prospective guano output as 250,000 tons, and Kiblia's [Jibleen's] as 500,000 tons, the 'substantial' amounts recovered were in fact 26,191 tons in 1857–8, and 14,250 tons in 1858–9.⁹⁰ Mathew says that the infrequent 'mention of Kuria Muria guano in the 1860's' suggests that 'most of the best' was gone by 1861.⁹¹ How much profit Ord and Company made from the venture is 'uncertain', but the government made none. It remitted the 1857–8 royalty of £4,800 to compensate for Ord's first aborted expedition, and the next year's royalty of £2,850 was never paid. The costs incurred by the expeditions of the *Juno* and the *Cordelia* were therefore never recovered, and the government finally terminated Ord's contract on 18th May 1861.⁹²

Only Ord and Company could judge whether they received a worthwhile profit from the Kuria Muria venture, but the government's return would have been meagre, even had it been paid, and was, as things turned out, anyway of short duration. The benefits to the nation, through its farmers, should have been those 40,441 tons of guano removed between 1957 and 1959 which otherwise would have been unavailable. However, as most of that went to make superphosphates, the gain was indirect. Overall, not a great deal was lost, but little was gained either. The game was not worth the candle, and Stephen Freemantle's judgement of the affair as not viable seems to be wholly vindicated.

From a historical perspective, Cooper viewed the Kuria Muria venture, during which Ord was warned by the British government for his bad treatment of imported workers, as a British example of 'European greed or *laissez-faire* . . . responsible for many such things as happened in the Kuria Muria Islands, and for far worse things'.⁹³ Nevertheless he concluded that 'in East Africa and the Arabian Sea in the period under review [i.e. 'from earliest times to . . . 1856'] no other such case of misconduct or negligence can be charged against the people who fought and were finally to kill the Slave Trade'.⁹⁴ By the mid-1880s the islands had reverted to their former state, with few inhabitants who eked out a poor living, and the old accretions of guano gone.⁹⁵ That still being recovered in 1894 and occasionally collected, came from fresh deposits.⁹⁶

The voyages to Kuria Muria and other islands took place in the fifteen or so years between 1844 and 1859 when guano was of paramount importance to British farmers. The quality of the guano found never seriously rivalled that of Peru, and, from 1856, farmers increasingly turned to the rapidly developing and cheaper superphosphates to fertilise their crops, although some guano continued to be used into the next century.⁹⁷

Coupland and Mathew wrote about the Kuria Muria voyages in the respective contexts of colonial history and of economics and commerce. This paper has explored a particular co-operation between farmer and sailor, agriculture and the navy, which was considered vital at the time. The guano voyages were an important, if small, part of naval and agricultural history. As we have seen, they involved long sea passages, rugged landscapes, dangerous landings hindered by monsoon tempests, precipitous cliffs, encounters with the

poor and the exalted, and the promise of considerable profit. This paper resurrects some of the details of the effort that went into such cooperation, as well as its wide global scope.

Notes

1. The guano voyages formed part of my Ph.D. research, but were not included in the thesis: C.E. Cordle, 'Hop Cultivation and Marketing: Wealden Kent and Southwark, 1744–2000' (unpublished doctoral thesis, University of Leicester, 2005).
2. C.S. Orwin and E.H. Whetham, *History of British Agriculture 1846–1914* (1964; Newton Abbot, 1971), pp. 28, 30.
3. H.H. Parker, *The Hop Industry* (London, 1934), p. 61.
4. P. Brassley, 'Plant Nutrition', in E.J.T. Collins, ed., *The Agrarian History of England and Wales. Volume 7, 1850–1914. Part 1* (Cambridge, 2000), p. 541.
5. Orwin and Whetham, *British Agriculture*, p. 28; N. Goddard, 'Agricultural Institutions: Societies, Associations and the Press', in Collins, *Agrarian History, Volume 7. Part 1*, pp. 653, 657.
6. F.M.L. Thompson, 'Agricultural Chemical and Fertiliser Industries', in Collins, *Agrarian History. Volume 7. Part 2*, pp. 1019–20, 1025.
7. Orwin and Whetham, *British Agriculture*, p. 278.
8. Brassley, 'Plant Nutrition', p. 541; Parker, *Hop Industry*, p. 62.
9. Thompson, 'Agricultural Fertiliser Industries', pp. 1020–1.
10. Thompson, 'Agricultural Fertiliser Industries', p. 1041.
11. S. Wilmot, 'The South-West: Wiltshire, Dorset, Somerset, Devon, and Cornwall', in Collins, *Agrarian History. Vol. 7. Part 1*, p. 416; P. Brassley, 'Arable Systems', in Collins, *Agrarian History. Vol. 7. Part 1*, p. 460; Thompson, 'Agricultural Fertiliser Industries', p. 1021.
12. Thompson, 'Agricultural Fertiliser Industries', p.1020.
13. Parker, *Hop Industry*, pp. 61, 122–3.
14. Parker, *Hop Industry*, p. 123; A.H. Burgess, *Hops: Botany, Cultivation and Utilization* (London, 1964), p. 120.
15. Parker, *Hop Industry*, p. 123; Burgess, *Hops*, pp. 65, 120.
16. Burgess, *Hops*, p. 120.
17. Parker, *Hop Industry*, p. 62.
18. E.J.T. Collins, 'Rural and Agricultural Change', in Collins, *Agrarian History, Vol. 7, part 1*, pp. 126–7.
19. Parker, *Hop Industry*, p. 63.
20. Collins, 'Rural and Agricultural Change', p. 126.
21. British Parliamentary Papers, *Accounts and Papers (14) Trade and Navigation. Session 2, XXXVIII* (1857), 310–11.
22. Information from Combourne farm books kindly lent by David Wickham of Cranbrook, Kent and used here with his permission; Cordle, 'Hop Cultivation and Marketing', pp. 155–7.
23. W.M. Mathew, *The House of Gibbs and the Peruvian Guano Monopoly* (London, 1981), p. 22.
24. Mathew, *House of Gibbs*, pp. 1, 22–3.
25. Mathew, *House of Gibbs*, pp. 23, 43, 47–8, 51.
26. Mathew, *House of Gibbs*, p. 135.
27. Mathew, *House of Gibbs*, pp. 93–5, 135–6, 147.
28. Mathew, *House of Gibbs*, pp. 1, 27.
29. Mathew, *House of Gibbs*, pp. 57–8.
30. W.M. Mathew, 'Anglo-Peruvian Commercial and Financial Relations, 1820–1865 with special reference to Antony Gibbs and Sons and the Guano Trade' (unpublished doctoral thesis, University of London, 1964), pp. 416–17.
31. B.P.P., *Accounts and Papers, XXXVIII*, (1857), 307.

32. Ibid., p. 308.
33. Mathew, *House of Gibbs*, pp. 138, 147.
34. Mathew, *House of Gibbs*, p. 138.
35. Mathew, *House of Gibbs*, pp. 138–9, and pp. 147–65, where the British government's action on guano is fully covered. Mathew has written in great detail about the guano trade with Peru, both in his doctoral thesis 'Anglo-Peruvian Commercial and Financial Relations, 1820–1865', and in *House of Gibbs*.
36. Mathew, *House of Gibbs*, pp. 149–50, 160.
37. B.P.P., *Accounts and Papers*, XXXVIII, (1857), 308.
38. Ibid., p. 309.
39. Ibid., p. 309.
40. Ibid., p. 308.
41. Ibid., p. 313.
42. Ibid., p. 314.
43. Ibid., p. 318.
44. Ibid., pp. 325–6.
45. Ibid., pp. 319, 345.
46. Ibid., p. 345.
47. Ibid., p. 315.
48. Ibid., p. 310.
49. Ibid., pp. 310–11.
50. Ibid., p. 314.
51. Ibid., p. 309.
52. R. Coupland, *East Africa and its Invaders from the Earliest Times to the Death of Seyyid Said in 1856* (Oxford, 1938), p. 525. In 1938, R. Coupland wrote an absorbing and comprehensive account of the Kuria Muria guano venture and of the ceding of the islands to Britain within the wider context of Britain's foreign policy in East Africa until 1856. See R. Coupland, *East Africa and its Invaders*, pp. 524–45. W.M. Mathew, using some of Coupland's material, also wrote about guano and the Kuria Muria islands from an economic and commercial standpoint in Mathew, 'Anglo-Peruvian Commercial and Financial Relations, 1820–1865', pp. 406–18.
53. B.P.P., *Accounts and Papers*, XXXVIII, (1857), p. 318.
54. Ibid., pp. 345–6.
55. Coupland, *East Africa and its Invaders*, pp. 108–9, 274, 279, 295, 320.
56. Ibid., p. 299.
57. Ibid., pp. 298, 547–50.
58. B.P.P., *Accounts and Papers*, XXXVIII, (1857), 345.
59. Coupland, *East Africa and its Invaders*, pp. 526–8.
60. B.P.P., *Accounts and Papers*, XXXVIII, (1857), 345–6.
61. Ibid., pp. 346–7.
62. Coupland, *East Africa and its Invaders*, p. 530.
63. Ibid., pp. 530–32.
64. Ibid., pp. 320, 553.
65. B.P.P., *Accounts and Papers*, XXXVIII, 346–7.
66. Ibid., p. 347.
67. Ibid., p. 319.
68. Ibid., p. 319.
69. Ibid., pp. 319–20.
70. Ibid., p. 320.
71. Ibid., p. 347.
72. Ibid., p. 319.
73. Ibid., p. 348.

74. Ibid., pp. 370, 318.
75. Ibid., p. 370.
76. Ibid., pp. 379–80.
77. Ibid., p. 370.
78. Ibid., p. 379.
79. Ibid., p. 379.
80. Ibid., p. 380.
81. Ibid., pp. 379–80.
82. Ibid., p. 380.
83. Coupland, *East Africa and its Invaders*, pp. 540–2.
84. B.P.P., *Accounts and Papers*, XXXVIII, 380.
85. Ibid., p. 318.
86. Coupland, *East Africa and its Invaders*, p. 541.
87. Ibid., pp. 538–9.
88. Ibid., pp. 538–9, 542.
89. Mathew, 'Anglo-Peruvian Commercial and Financial Relations, 1820–1865', p. 416.
90. Coupland, *East Africa and its Invaders*, p. 542.
91. Mathew, 'Anglo-Peruvian Commercial and Financial Relations, 1820–1865', p. 416.
92. Coupland, *East Africa and its Invaders*, pp. 542–3.
93. Ibid., pp. 540–41, 545.
94. Ibid., p. 545.
95. Ibid., p. 544.
96. Mathew, 'Anglo-Peruvian Commercial and Financial Relations, 1820–1865', pp. 416–7.
97. Ibid., p. 415; Mathew, *House of Gibbs*, p. 147; Brassley, 'Plant Nutrition', pp. 539, 541, 544.