

House Sparrows down coal mines

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The House Sparrow *Passer domesticus* is unique among birds in its close association with man. It is regularly to be found living in large buildings such as railway stations, factories, breweries and stores. There is normally ready access to such buildings; the birds move freely in and out, using the buildings for breeding and roosting, and even obtaining some of their food there from scraps provided by man. In some circumstances, they even seem to spend their whole lives indoors. Such appeared to be the case with a small flock of House Sparrows which lived, some years ago, in the old Europa Building (now Terminal 2) at London Heathrow Airport; being an air-conditioned building, the birds could not move freely in and out, and seemed to spend most of their time in the area of the snack bar, feeding on crumbs and resting in the concealed lighting recesses in the ceiling.

In view of such circumstances, it is perhaps not unexpected that occasional House Sparrows should find their way into coal mines and be trapped, but it is surprising that they can survive in such an environment. There are, however, a number of records.

In May 1956, the following report appeared in the press: 'Sparrows nesting hundreds of feet underground at the bottom of the pit shaft at Linton Colliery, Northumberland, are being fed by miners.' I tried to obtain further details, but was unsuccessful. Following this, there was a report on the BBC Northern News on 21st March 1962 of a pair of House Sparrows building a nest at the foot of the shaft at Waldridge D Pit, Chester Moor Colliery, Co. Durham, 596 feet (182 m) below ground level. Subsequent investigation revealed that a pair had been first seen underground on 12th March and had been feeding on crushed oats from the pit stables and bread crumbs provided by the miners; they were also seen drinking water that had collected at the bottom of the shaft. The female was caught on the night of 29th/30th March—on the instructions of the mine manager, who did not consider that the birds could survive—and released above ground; the male was not seen again after that date. These sparrows in Waldridge D remained within 150 m of the shaft bottom, which was lit continuously by electric light, except for the periods from 06.00 on Saturdays to 06.00 on Sundays and again from 12.00 to 22.00 on Sundays. The manager informed

me that, contrary to the news report, although there was a certain amount of hay and straw lying around, there was no evidence of the birds having attempted to build a nest. In addition to this incident, the manager had also known of two previous occasions when House Sparrows had been found down the pit, but he did not have further details.

The next occurrence was also in Co. Durham, where, in March 1963, a single House Sparrow was apparently living quite happily at a depth of 300 m in Horden Colliery. This bird had been adopted by the miners, who provided food, and had become quite tame (Green 1963). Once again, unfortunately, I was unable to obtain further details.

Although from the above it is clear that there have been a number of occasions when House Sparrows have found their way into coal mines and have managed to survive for at least short periods, the available information on these occurrences is somewhat limited. It was thus fascinating to learn of a further occurrence and this time to be able to obtain a much more complete story. In this case not only have two birds been down the mine for almost three years, and a third for almost two years, but, even more surprising, a pair has actually bred down the mine.

Two House Sparrows appeared at the bottom of the skip shaft in Frickley Colliery, South Elmsall, Yorkshire, in June 1975, and a third the following June. It is most probable that they were recently fledged, inexperienced immatures when they found their respective ways into the mine. It is also highly probable that they came down the skip shaft, since the top of this is open to the air and accessible to the numerous House Sparrows that live in the surrounding colliery buildings. Mine ventilation is by induced draught through the man shaft, access to which is only through airlock doors. Although the two shafts are separated only by a couple of hundred metres, access between them underground is by an airlock consisting of four doors in series, only one of which is opened at a time; it is thus extremely unlikely that, if the sparrows had descended by the man shaft, they could have made their way underground to the bottom of the skip shaft.

The skip shaft bottom is at 640 m. It is continuously illuminated by strip lighting and manned by the onsetter at the bottom of the shaft 24 hours a day from Monday to Friday; during the weekends, maintenance men visit the area, but, in general, it is a quiet part of the mine. The sparrows live in an area consisting of a tunnel about 6 m high and 9 m broad and some distance along a roadway going off at right angles to the man shaft via the airlock. In all, they appear not to move more than about 100 m, which is the extent of the illuminated area accessible to them. Food is provided by the onsetters. Some animal life is present: occasional flies (Diptera), including midges, and moths (Lepidoptera), no doubt drawn down with the ventilation air, and parasites on the mine house mice *Mus musculus*. The birds have been seen catching moths, but obviously they could not have survived without deliberate provision of food. A small amount of water collects at the bottom of the shaft, but, in any event, water is also provided with the food.

In autumn 1977, the sparrows were seen collecting scraps of material. Grass was provided and a pair built a nest behind a girder in the centre of the roof. The birds bred there and three young were present in the nest on

5th and 14th November. Later, the three young fledged, but disappeared shortly afterwards. It seems probable that this could only have been the result of a dietary deficiency as nestlings, when, for the first few days of life, a certain amount of animal food seems to be essential. Despite the regular provision of food and water, the birds have in no way become tame and do not allow a close approach.

I was allowed to visit the mine on 10th March 1978; I was informed at that time that the original three birds were still present, though I saw only one, a male which appeared to be in excellent condition.

The temperature at the foot of the skip shaft is fairly constant at 15-20°C and there seems little way in which the birds could be aware of either diurnal or seasonal changes. No detailed observations on roosting have been made, but it was said that they were active during one shift for a period and then the activity changed to a different shift, suggesting that the birds had adapted to a cycle different from—and apparently greater than—24 hours.

As already stated, it seems most probable that the sparrows entered as naïve juveniles, possibly trying to catch moths on the skip. It also seems likely that the first two were males and the third a female. It is difficult to see what triggered breeding. If the third bird was in fact a female, she should have reached breeding condition in the normal way in May-June 1977, after about 49 weeks (340 days); in fact, breeding was delayed until about 71 weeks (500 days). If the birds' breeding rhythm were controlled by a cycle of activity and roosting, a simple sum would suggest that they are operating on a 35-hour 'day'.

The House Sparrow is a very successful species. The fact that it is able to survive in such an alien environment as a coal mine, even allowing that food and water is deliberately provided, gives further testimony to its remarkable adaptability.

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Summary

House Sparrows *Passer domesticus* have been reported living in coal mines at Linton Colliery, Northumberland, in 1956; at a depth of 182 m in Chester Moor Colliery, Co. Durham, in 1962; and at a depth of 300 m in Horden Colliery, Co. Durham, in 1963. The best-documented record is from Frickley Colliery, Yorkshire, where two and later three sparrows lived at a depth of 640 m from summer 1975 to at least spring 1978; in November 1977, a pair nested and reared three young, which, however, did not survive. It seems likely that the sparrows entered the mines as naïve juveniles.

Reference

GREEN, S. V. 1963. Sparrow down a mine. *Country Life* (14th March).