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## BREEDING DATA FOR BIRDS IN GHANA

by M. A. Macdonald

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Information on the breeding biology of many common West African birds is remarkably scant. From Ghana the principal contributors have been Grimes (1972) and Greig-Smith (1977). In view of that it is worth recording breeding dates, clutch and brood sizes of birds in Ghana, even in the absence of an overall analysis of breeding seasons which for most species would require considerably more information.

The data were gathered mainly in the area of Cape Coast (for localities, see Fig. 1) between December 1975 and July 1978. Data on forest birds will be given in a separate paper. Evidence of breeding was noted in a purely casual manner except for a few species for which a separate account will be written. As often happens, some common species are for one reason or another less well represented than the more unusual species (e.g. Village Weaver *Ploceus cucullatus*).

To save space in the presentation of the results, abbreviations are employed as follows:

- BP - male in breeding plumage  
 TD - male in territorial display  
 COU - male in courtship display.  
 COP - copulation or female soliciting  
 NB - nest-building, including birds carrying material  
 NE - nest with eggs, including birds apparently incubating  
 NY - nest with chicks, including unfledged nidifugous species  
 FY - adult carrying food as if to nest  
 FAM - dependent young begging or with adults after fledging  
 IND - independent young in juvenile plumage or with gape-wattles  
 C - clutch size, as C3, 3xC4 etc.  
 B - brood size (young in nest or unfledged nidifugous young)  
 F - family size (of dependent young or independent young with adults)

## SYSTEMATIC LIST

- Podiceps ruficollis* NE, IND 29 Nov 1978, Accra.  
*Ixobrychus minutus* BP (red bill), TD (circular patrols by pair)  
 29 Jun 1977; BP 13-14 Jun 1978, Cape Coast. Wet-season visitor  
 to area (Macdonald 1977).  
*I. sturmi* IND 8-9 Jul 1978, Cape Coast.

*Ardeola ralloides* BP (blue bill) from late Apr, Cape Coast; NE (2 nests) 1 Jul 1978, Accra.

*A. ibis* BP from late Mar, Cape Coast; NE, NY 8 Jul 1977; NE 1 Jul 1978, Accra.

*Egretta ardesiaca* NE, NY 8 Jul 1977, Accra.

*E. gularis* NY (several nests) 8 Jul 1977; NE 1 Jul 1978, Accra.

*Ardea purpurea* NB (one carrying stick) 22 May 1976, Lolito.

*Dendrocygna viduata* NE (C9) 5 Jul 1976; NY 17 Jul 1976, 22 Aug 1976 (B3, almost full-grown); IND 1 Oct 1977, Cape Coast. One egg taken from the nest hatched under a hen on 4 Aug (incubation period at least 31 days). Probably a strict wet-season breeder, eggs laid Jun and Jul.

*Neophron monachus* COP 29 Sep 1977, 29 Dec 1975; NB 3 Oct 1976; NE 11 and 18 Jan 1976, 18 and 29 Oct 1977, 22 Nov 1977, Cape Coast. Probably a strict dry-season breeder, eggs laid Oct to Jan.

*Accipiter badius* COP 28 Dec 1975, 3 Jan 1976; FY 6 and 23 Feb and 3 Mar 1976; IND 19 Mar 1978. All data from one territory at Cape Coast.

*Milvus migrans* Eggs laid late Sep to Feb (Macdonald in prep.).

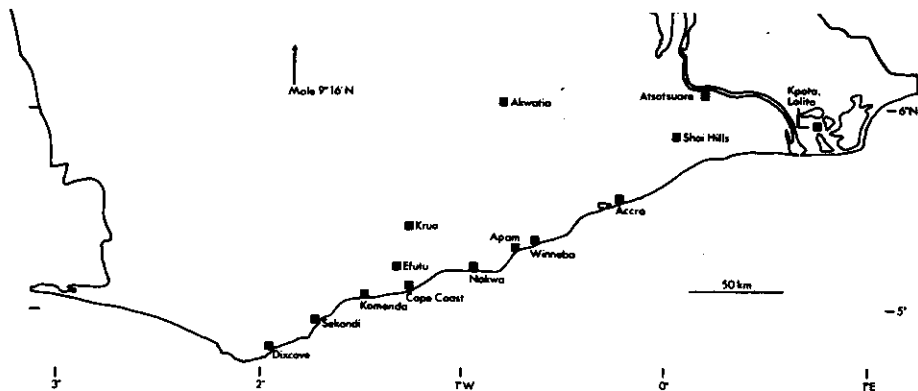


Figure 1. Map of southern Ghana showing localities mentioned in the text.

*Falco ardosiacus* FAM (F2) 16 May 1977, Cape Coast.

*Francoelinus bicalcaratus* FAM 5 Oct 1977, Cape Coast. Several families of small but flying young 4-9 Jan 1978, Mole.

*Limnocorax flavirostris* NY (B at least 3, very small chicks) 28 Mar 1976, 1 May 1976 (possibly the same brood); IND 1 Oct 1977, Cape Coast.

*Gallinula angulata* NB 15 Jun 1976; NY (B3) 9 Jul 1978, Cape Coast. A wet-season migrant (Macdonald in prep.).

*G. chloropus* NY (B at least 2) 8 Jul 1977, Accra. IND 22 May 1976, Kpota.

*Porphyrio alleni* IND (F4) 7 Mar 1976, Cape Coast.

*Eupodotis melanogaster* COU 6 May 1978, Atsotsuare.

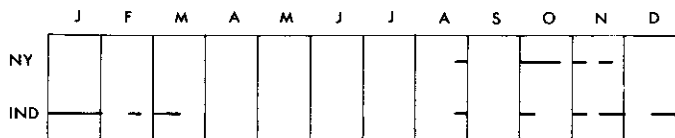


Fig. 2

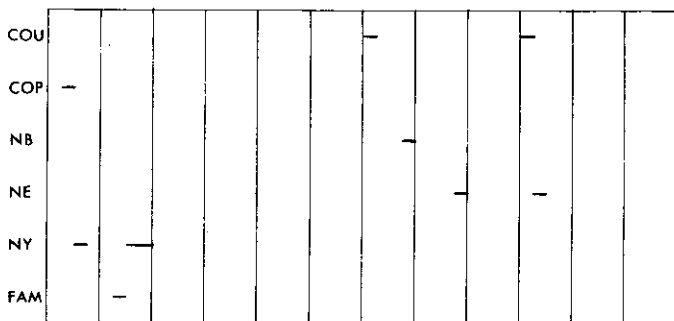


Fig. 3



Fig. 4

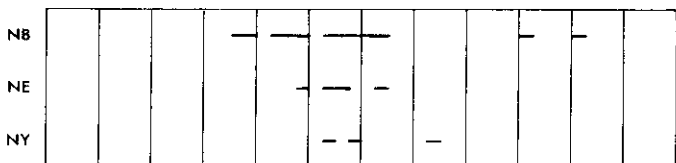


Fig. 5

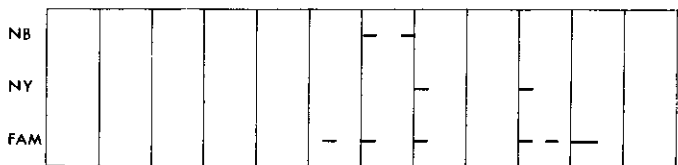


Fig. 6

Figures 2-6. Breeding records of *Actophilornis africana* (Fig. 2), *Streptopelia senegalensis* (Fig. 3), *Apus affinis* (Fig. 4), *Corvus albus* (Fig. 5) and *Nectarinia cuprea* (Fig. 6). The time unit used in plotting is the 'quarter month', and the horizontal lines indicate observations of breeding activity as abbreviated on the left margin.

- Actophilornis africana* (Fig. 2). Probably a strict wet-season breeder, eggs laid Jun to Oct. 4xB1 (from NY); 1xF1, 3xF2, 1xF3 (from IND). The difference in apparent family size probably reflects differing visibility of young at different ages. All data from Cape Coast area.
- Himantopus himantopus* NY (B2) 8 Jul 1977; IND (F2) 7 May 1978 (just flying), Accra.
- Glareola pratincola* NY, IND 8 Jul 1977, Accra. FAM 22 May 1976, Kpota; (F1) 13-26 Jun 1977, Cape Coast. IND 27 Apr and 14 May 1977, Cape Coast.
- Sterna albifrons* History of nest near Cape Coast 1976: one egg in nest 29 Jun, adult incubating to 11, probably 18 Jul; three downy chicks 25 Jul, two chicks from 1 Aug to 11 Sep (flying from 6 Sep). C3?, F2. Incubation period probably around 20 days. COU 22-29 Jun 1977 at same place. Wet-season visitor to area (Macdonald in prep.).
- Streptopelia senegalensis* (Fig. 3). Probably a late rains and dry-season breeder, with eggs from Aug to Feb. 3xC2, 2xB2, 1xF2. All data from coastal strip west of Cape Coast.
- Turtur afer* NB 23 May 1976, Accra. NE (egg fully formed in oviduct) 6 Jan 1977; NY 17 Jun 1976, Cape Coast.
- Crinifer piscator* NB 31 Mar 1976, 30 May 1977, 13 Sep 1976; FAM (F2) 10 Oct 1977; IND late Oct 1976, Cape Coast. Probably a wet-season breeder.
- Chrysococcyx caprius* Eggs laid Mar to Jul (Macdonald in prep.).
- Centropus grillii* BP first week May 1976, Cape Coast.
- C. senegalensis* FAM (F1) 28 May 1976; probable NE-NY late May to early Jun 1977, Cape Coast.
- Caprimulgus climacurus* NE (C2) 25 Apr-11 May 1977 when one egg with well-developed dead embryo remained. Female incubated during day. If disturbed would walk back to nest after danger passed. Incubation period over 17 days. Also FAM (F1) 20 Mar 1977; IND 9 Jul 1978, Cape Coast.
- Macrodipteryx longipennis* BP early Apr 1976, 3 Jan 1978, Mole; 23 Jan 1977, 25 Jan-9 Feb 1978, Cape Coast.
- Apus affinis* (Fig. 4). All data from ejected nest contents below colony at Cape Coast. Extended breeding in wet season, eggs Feb to Nov. Definite cessation during mid dry-season, but break in Jul-Aug maybe due to incomplete coverage of this period.
- Chaetura ussheri* NY 10 Mar 1978, Dixcove. Nest ca. 2 m down a chimney of ca. 30 cm inside diameter.
- Alcedo cristata* FAM (F1) 5 Jun 1976, Cape Coast.
- Halcyon senegalensis* COP 19 Jun 1976, Cape Coast.
- Lybius bidentatus* NY 30 Apr 1977; IND 25 Feb 1977, Cape Coast.
- L. vielloti* NY 29 May 1976, Shai Hills.
- Hirundo semirufa*, *H. senegalensis*, *H. abyssinica* In the Cape Coast area apparently wet-season breeders. NB in early rains when puddles formed.
- H. spilodera (preussi)* IND (several), also adults apparently prospecting below bridge 6 May 1978, Atsotsuare.
- Macronyx croceus* PY 29 Jun 1976, Cape Coast; FAM 8 May 1977, Nakwa.
- Tchagra minuta* FAM (F1) 4 Oct 1977, Nakwa.
- T. senegala* FAM (F1) 22 Aug 1976, Cape Coast.
- Lamprotornis purpureus* NB 29 May 1977, Shai Hills.

- Corvus albus* (Fig. 5). A wet-season breeder with eggs probably laid from May to Jul. 1xB4. All data from Cape Coast area.
- Pycnonotus barbatus* NB 1 Jul 1977, 28 Nov 1976, 11 Dec 1977, Cape Coast. FY 24 Jan 1976, Cape Coast; 23 Dec 1976, Nakwa. FAM (F1) 6 May 1978, (F2) 25 Sep 1977, Accra; (F2) 23 Oct 1977, Komenda. IND 3 Jan 1976, (F2) 30 Sep 1977, Cape Coast; 30 Dec 1976, Krua. Probably lays over much of the year, but records are concentrated to suggest main season from Jul to Dec.
- Chlorocichla simplex* NB 25 Jul (two territories) and 18 Dec 1976, Cape Coast.
- Turdus pelios* FY 21 Jun 1977, Nakwa.
- Sphenoeacus mentalis* NB 18 Jun 1978, Nakwa. Males in song Nakwa and Cape Coast Apr to Jul so probably a wet-season breeder.
- Cisticola erythrops* NB 18 Jun 1977, Cape Coast. FAM 13 Jun 1976, Shai Hills.
- C. lateralis* FAM (F2) 12 Jun 1976, Akwatia. IND 22 Oct 1977, Cape Coast.
- C. aberrans* COU (allofeeding) 29 May 1977, Shai Hills.
- C. galactotes* NB 8 May 1977, Nakwa and Cape Coast; 29 Jun 1977, 3 Jul 1977, 18 Jul 1976, Cape Coast. NY 28 Nov 1976. FAM (F1) 19 May 1976, (F2) 28 Nov 1976, Cape Coast. Probably mainly a wet-season breeder.
- C. brachyptera* NB 14 Jan 1977, Nakwa.
- C. juncidis* NB 24 May 1977, Apam; 21 Jun 1977, Nakwa; 14 Jul 1976, Cape Coast; 23 Dec 1976, Nakwa. NY (B at least 3) 25 Aug 1976, Sekondi. Probably mainly a wet-season breeder.
- Prinia erythroptera* NB 3 Jun 1976, Cape Coast. FAM 13 Jun 1976, Shai Hills.
- P. subflava* NB 23 May 1976, Accra.
- Cameroptera brachyura* COU 17 Apr 1976, Cape Coast. NB 27 Jun 1976, Efutu; late May to early Jun 1977, Cape Coast.
- Eremomela pusilla* FAM (F2) 29 May 1977, Shai Hills.
- Bradornis pallidus* NY (B3) 16 May 1976, Cape Coast; IND 12 Feb 1977, Shai Hills.
- Platysteira cyanea* FAM (F2) 17 Jun 1978, Cape Coast.
- Nectarinia cuprea* (Fig. 6). Probably a strict wet-season breeder, with eggs laid May to Sep. Males came into new plumage Feb to Mar. 5xF1, 3xF2. All data from Cape Coast area.
- N. coccinigaster* COP 27 Mar 1976; FAM (F1) 3 Jul 1977, (F2) 6 Jul 1978; IND 13 Jan 1977, Cape Coast. Also nest near Cape Coast 1976 found 17 Oct with two eggs, 1 Nov with two newly hatched chicks which 'exploded' a day or two prematurely on 14 Nov. Incubation period at least 15 days, fledging period probably 15-16 days.
- Amblyospiza albifrons* TD 13 Jun 1978, Cape Coast; 8 Jul 1978, Nakwa. NE Aug 1976, Cape Coast. Wet-season visitor to coastal strip (Macdonald in prep.).
- Ploceus pelzelni* COP 27 Mar 1976, Cape Coast. NB 8 May 1977, Nakwa; 5 Jun 1977, Komenda. FY 1 May 1976; FAM (F1) 7 May 1977; IND 24 May 1976, Cape Coast. Suggests it is mainly a wet-season breeder.
- P. superciliosus* FAM (two separately) 22 Oct 1977; IND 7 and 20 Nov 1976, Cape Coast.

- P. nigricollis* NB 4 Jan 1977, 25 Apr 1976, 17 Jun 1978. FAM (F at least 2) 6 Feb 1976, Cape Coast; 19 Apr 1976, Akwatia (two families).
- Quelea erythrops* Males in full BP in Cape Coast area from late May. NB 5 Jun 1977, Komenda.
- Euplectes afer* Males in full BP and displaying in Cape Coast area from early Apr. Presumed strict wet-season breeder.
- E. hordeaceus* Males in full BP and displaying in Cape Coast area from early Apr. Presumed strict wet-season breeder.
- E. macrourus* Males in full BP and displaying in Cape Coast area from mid-Apr to mid-Oct. NB 24 Apr, 6 Jun 1976; COP 26 Jun, 14 Jul 1976; FAM (F1) 13 Oct 1977, Cape Coast. Presumed strict wet-season breeder.
- E. orix* Males in full BP and displaying in Cape Coast area from mid-Apr. NB 7 Jun 1977, Winneba; NE (C2) 1 Jul 1978, Accra. Presumed strict wet-season breeder.
- Passer griseus* Main, if not only, breeding in wet season at Cape Coast.
- Vidua macroura*, *V. wilsoni* Both wet-season breeders. A separate account is being prepared.
- V. orientalis* BP, TD or COU ('floating' display) 4-5 Jan 1978, Mole.
- Estrilda melpoda*, *E. troglodytes*, *Lagonosticta rufopicta* All wet-season breeders. More details in a paper on viduines, in prep.
- L. rubricata* NB 5 Jun 1976, Cape Coast.
- Lonchura fringilloides* NB 8 Jun 1976; IND 29 Oct 1977, Cape Coast.
- L. bicolor* NB 8 Mar, 9 May, 16 May 1976; FAM 25 Jul (2 families), 28 Aug 1976 (several families); IND 1 Oct 1977, 18 Dec 1976, Cape Coast.
- L. cucullata* Probably breeds for much of the year (active nests found Jan to Jul, and by extrapolation occur in all months except Aug and Sep), but an obvious increase in nest-building activity in Mar at the start of the rains. 1xC4, 1xC6; 1xB4; 1xF4, 1xF5. At one nest at Cape Coast 1977, 6 eggs laid in five days, incubation began with last egg on 17 Jun, first eggs hatched 30 Jun. Incubation period 14 days.

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Red-winged Pytilia *Pytilia phoenicoptera*, Nigeria. Photo : Philip Blasdale