

RECENT PUBLICATIONS ON WADERS

compiled by Theunis Piersma

Since we try to make these lists as complete as possible, any help (pointing out omissions; sending new titles, abstracts or reprints) is most welcome. These should be sent to Theunis Piersma, Korte Nieuwstraat 4, 9724 LC Groningen, The Netherlands. During the production of this issue, help was received from Cor Smit and F.U.Schmidt. Jadwiga Gromadska provided abstracts of two Russian papers. Kate Lessells has written a detailed summary of an important, but probably not widely available, paper. This is included as an Appendix to this list. Translated titles of papers in languages other than English are bracketed: round brackets if the translation is by the author(s); square brackets if not.

- ARDAMACKAYA, J.B. 1983. [Wintering waders in the Black Sea reservation.] Biul. Mosk. o-va. ispyt prir Otd. biol. 88(1): 64-66. In Russian. At the end of the 1940's only Snipe wintered in study area. Since then, several ecological and climatic changes (e.g. later frosts) have resulted in 7 wader species now wintering there.
- ARMOUR, T.E. 1981. Laughing Gull predation on migrating birds. Raven 52:35. (132 Holdsworth Rd., Williamsburg, VA 23185, USA). Prey is Sanderling.
- ASHMAN, P.R. 1983. First Mariana Islands record of a Ruff. 'Elepaio 43:61. (1242 E. Dayton St., Madison, WI 53703, USA)
- BAUMANIS, J. 1982. [Terek Sandpiper Xenus cinereus (Guld.). A new species in Latvian fauna.]. In The Rare Plants and Animals 1982 (Riga, Latvia). pp.40-41. In Latvian with Russian summary. (Biol. Inst., Riga, Latvia, USSR.)
- BECKER, P.H. et al. 1981. Bevorzugte Nahrungs-, Rast- und Brutgebiete von Watvögeln (Limicolae) und Graureihern (Ardea cinerea) im Raum Wilhelmshaven. [Most important feeding, roosting and breeding areas for waders and Grey Herons near Wilhelmshaven.] Vogelk. Ber. Niedersachs. 13: 1-9. In German. (Inst. Vogelforschung, An der Vogelwarte 21, 2940 Wilhelmshaven 15, W. Germany)
- BEHRENS, H. 1980. Die Brutvorkommen der Limikolen in Hessen 1977 und 1978. Vogel und Umwelt 1: 78-84. In German. Numbers of pairs recorded: 2042 Lapwings, 171 Little Ringed Plovers, 330 Snipes, 18 Curlews, 4 Black-tailed Godwits, and 4 Common Sandpipers.
- BEINTEMA, A.J. 1982. Meadowbirds in the Netherlands. In: D.A.Scott (ed.), Managing Wetlands and Their Birds. IWRB, Slimbridge. pp. 83-91. (RIN, Kasteel Brockhuizen, Leersum, The Netherlands).
- BELIK, V.P. & BAKHTADZE, G.B. 1982. (Waders of sand massif near Don River and Tysmlyansk reservoir.) Ornithologija 17:157. In Russian.
- BESER, H.J. 1983. Schachtelbrut beim Kiebitz. (Vanellus vanellus L.) [Box-nesting (?) of a Lapwing.] Charadrius 19:11. In German. (Berliner Str. 18, 4005 Meerbusch 3, W. Germany.)
- BESER, H.J. 1983. Mäuserbeginn bei Brütenden Kiebitzen (Vanellus vanellus L.). [Start of moult of breeding Lapwings.] Charadrius 19: 11-13. In German.
- BIANKI, V.V., KRASNOV, Yu.V. & SOROKIN, V.E. 1982. (Additional data on waders at White Sea.) Ornithologija 17:159. In Russian.
- BOEKEMA, E.J., GLAS, P. & HULSCHER, J.B. 1983. De Vogels van de provincie Groningen. [Birds of the province of Groningen.]. Wolters-Noordhoff/Bouma's Boekhuis, Groningen. 387 pp. In Dutch. With 45 pp. on waders (species accounts).
- BOERE, G.C. 1983. Verslag van de 2e Technische Conferentie over Wetlands in West-Afrika; 8-16 December 1982 Nouadhibou, Mauretanië. [Report of the 2nd Technical Meeting on West African Wetlands.] Rapport 1983-13, Staatsbosbeheer, Inspectie Natuurbehoud, Utrecht, 26 pp. In Dutch. (Voorstraat 7, Beesd, the Netherlands.)
- BOESCH, D.F. (ed.) 1982. Proc. conf. on coastal erosion and wetland modification in Louisiana: causes, consequences and options. NCET, Ofc. Biol. Serv., FWS/OBS-82/59. 256 pp. (NCET, USFWS, 1010 Gause Blvd., Slidell, LA 70458, USA.)
- BOSSELMAN, J. 1981. Grosser Brachvogel (Numenius arquata) als Bente des Uhus (Bubo bubo). [Curlew as prey of Eagle Owl.] Naturschutz Ornithologie Rheinland-Pfalz 2:193. In German. (Lerchenweg 3, 5440 Mayen, W. Germany.)
- BOSTROM, U. & NILSSON, S.G. 1983. Latitudinal gradients and local variations in species richness and structure of bird communities on raised peat-bogs in Sweden. Ornis Scand. 14: 213-226. (Dept. Wildl. Ecol., Swedish Univ. Agricult. Sci., S-75007 Uppsala, Sweden.) Density of waders is higher on large (>50 ha) than on smaller bogs. Wader density increases northwards and also as bogs become rounder and wetter.
- BREIEHAGEN, T. 1983. (Temminck's Stint, Calidris temminckii, and Common Sandpiper, Actitis hypoleucos, laying in the same nest.) Vår Fuglefauna 6: 44-45. In Norwegian with English summary. (Avd. for Zool. Økologi, Zool. Mus., N-5014 Bergen, Norway.)
- BUCHANAN, L. 1982. Oystercatcher's breast impaled by bill. Notornis 29:340. (c/o Mangatarata School, R.D.1, Waitakaruru, N. Zealand.)
- BÜHLER, P. 1980. Zur Oberschnabellweglichkeit der Schnepfenvögel. [On the possibility of movements of the upper-bill in snipes.] Ökol. Vögel 2:128. In German.
- BURBRIDGE, A.A. & FULLER, P.J. 1982. Banded Stilt breeding at Lake Barlee, Western Australia. Emu 82: 212-216. (Dept. Fish & Wildl., W.Austr. Wildl. Res. Centre, P.O.Box 51, Wanneroo, WA 6065, Australia.)
- BUSCHEK, M., BUSCHEK, H. & HAAG, H. 1980. Brachschwalbe (Glareola pratincola L.) erstmals im NSG "Kelzer Teiche"/Kreis Kassel 1979 beobachtet. [First observation of a Pratincole in NSG "Kelzer Teiche" near Kassel in 1979.] Vogel und Umwelt 1: 88-89. In German. (Spiekershauser Str. 3, 3500 Kassel-Wolfsanger, W. Germany.)
- BYRJKJEDAL, I. & KÅLÅS, J.A. 1983. Plover's Page turns into Plover's Parasite: a look at the Dunlin/Golden Plover association. Ornis Fennica 60: 10-15. (Zool. Mus., Univ. Bergen, N-5000 Bergen, Norway.)

- CAIRNS, W.E. 1982. Biology and behavior of breeding Piping Plovers. Wilson Bull. 94: 531-545. (60 Newland Crescent, Charlottetown, Pr. Edward Island, Canada C1A 4H7.)
- CHAPMAN, B.R. 1982. An apparent instance of communal nesting by American Oystercatchers. Wilson Bull. 94:584. (Dept. Biol., Corpus Christi State Univ., Corpus Christi, TX 78412, USA.)
- CHRISTEN, W. 1982. Grasläufer Tryngites subruficollis in der Aareebene bei Grenchen so. [Buff-breasted Sandpiper near Grenchen, Switzerland.] Ornithol. Beob. 79: 286. In German.
- CLANCEY, P.A. 1982. Miscellaneous taxonomic notes on African birds, 63: On the Ringed Plover Charadrius hiaticula in Southern Africa. Durban Mus. Novitates 13: 127-138.
- CLARK, A. 1983. Some observations on the behaviour of the Three-banded Plover. Ostrich 53: 222-227. (32 Southy Rd., Farrarmere, Benoni, S.Africa 1500)
- CREUTZ, G. 1983. Die Wetterabhängigkeit des Zuglaufes bei der Waldschnepfe (Scolopax rusticola L.) in Mitteleuropa. [Weather dependence in migration of Woodcocks in central Europe.] Beitr. Vogelkd. Jena 29: 107-117. In German. (Park 3, DDR-8601 Neschwitz bei Bautien, E. Germany.)
- CUNNINGHAM, P. 1983. The Birds of the Outer Hebrides: a guide to their status and distribution. The Melven Press, Perth, U.K. 241 pp., £5.95.
- CYRUS, D.P. 1982. Blackwinged Plovers nesting on the coastal plain of Zululand. Ostrich 53: 248. (Zool. Dept., Univ. Natal, Pietermaritzburg, S. Africa 3201.)
- DAVIDSON, N.C. 1983. Formulae for estimating the lean weight and fat reserves of live shorebirds. Ringling & Migration 4: 159-166. (Dept. Zool., Univ. Durham, South Rd., Durham, DH1 3LE, UK.)
- DEMAN, R. 1983. De waadvogels van het natuurreservaat "Groot Buitenschoor" te Zandvliet-Antwerpen, 1981 & 1982. [The waders of the nature reserve "Groot Buitenschoor" at Zandvliet-Antwerpen, 1982 & 1982.] Wielewaal 49: 281-287. In Flemish with English, German & French summaries. (Kwade Veldenplein 8/3, 2060 Merksem-Antwerpen, Belgium.)
- DITTBERNER, H. & DITTBERNER, W. 1982. Ein Indiz für gemeinsamen Zug von Alpen- und Zwergstrandläufer (Calidris alpina, C. minuta). [An indication that Dunlins and Little Stints may migrate together.] Ber. Vogelwarte Hiddensee 2: 83-84. In German. (Karl-Frank-Str. 24, DDR-1162 Berlin, E. Germany.) A Dunlin and a Little Stint that were ringed on 4.9.73 in Blekinge, Sweden, were recaptured together on 14.9.73 at Schwedt (Angermünde), E. Germany.
- DOROFEEV, A.M., KOZLOV, V.P. & KUZMENKO, V.Yu. 1982. (Waders fauna of lake region in northern Belorussia.) Ornithologija 17:164. In Russian.
- DOROGOY, I.V. 1982. [Materials on Knot biology on Vrangal Island.] Vestn. Zool. No. 5: 65-69. In Russian. Subspecies Calidris canutus rogersi. Study in 1974-77 and 1979. Knot one of most common wader species. It prefers dry, gravel tundra. In 1976 and 1977 density of pairs in different habitats was 0-6.7 pairs km⁻¹. On southern Vrangal Is. coast, birds arrive between 20 & 30 May, in central area of island later. Displaying begins 2-5 days after arrival. Egg laying (no. is normally 4) in middle June. Egg size 42.6 x 30.1 mm; average weight 19.3g. Both sexes incubate. Males are more 'nervous' and actively distract predators, e.g. men, from near nest. Females have to be disturbed from nest. Only males take care of young, females go away. Food consists of Diptera (Tipulidae & Limoniidae) larvae.
- DRENCKHAHN, D. 1979. Woher stammen die im Herbst im Schleswig-Holsteinischen Wattenmeer mausernden Knutts (Calidris canutus canutus)? [Where do moulting Knots come from, during autumn in the Schleswig-Holstein Wadden Sea.] Corax 7: 178-179. In German. (Geigerstr. 65, 2300 Kiel 1, W. Germany.)
- DRIJVER, C.A. 1982. Cumulative ecological consequences of diking projects in the Wadden Sea area. Proc. Int. Symp. Polders of the World, Lelystad. Vol.2: 653-744. Wageningen. (Milieukunde, RU Leiden, Papenburg 127, 2311 GM Leiden, The Netherlands.) Description of completed and planned endikements in Wadden Sea and of their effects on (e.g.) shorebirds.
- DUBOURG, O. 1982. (Observation of a Grey Phalarope in Granville.) Cormoran 4:241. In French with English summary. (St. Planchers 50400, Granville, France.)
- DUNNE, P., SIBLEY, D., SUTTON, C. & WANDER, W. 1982. 1982 Aerial shorebird survey of Delaware Bay. Records New Jersey Birds 8: 68-75. (Cape May Bird Obs., Box 3, Cape May Pt., NJ 08212, USA.)
- DVORSKÝ, M. & DVORSKÁ, J. 1980. Ungewöhnliche Eizahl im Nest des Flussregenpfeifers (Charadrius dubius Gm.). [Unusual number of eggs in nest of Little Ringed Plover.] Zpravy MOS 38: 125-126. In Czech with German summary. (Partyzánská 1/5, CS-750000 Prácheň, Czechoslovakia.) Five eggs.
- DWYER, T.J., MCAULEY, D.G. & DERLETH, E.L. 1983. Woodcock singing ground counts and habitats changes in northeastern United States. J. Wildl. Manage. 47: 772-779. (USFWS, Patuxent Wildl. Res. Center, Laurel, MD 20708, USA.)
- DIJK, G. van. 1983. De populatie-omvang (broedparen) van enkele weidevogelsoorten in Nederland en de omliggende landen. [Breeding population size of some meadowbird species in the Netherlands and surrounding countries.] Vogeljaar 31: 117-133. In Dutch with English summary. (Roerdompstr. 31, 3815 BT Amersfoort, The Netherlands.) Literature survey and results of questionnaire of the numbers of Oystercatchers, Lapwings, Black-tailed Godwits, Redshanks, Ruffs, Snipes & Curlews.
- DIJK, G. van & LEDANT, J.-P. 1983. Le valeur ornithologique des zones humides de l'est Algérien. [The ornithological importance of wetlands in eastern Algeria.] Biol. Conservation 26: 215-226. In French with English summary. A little information on waders.
- ELMORE, J.B., Sr. 1983. American Avocets in Pulaski county. Ky. Warbler 59:19. (Rt. 1, Box 314A, Eubank, KY 42567, USA.)
- ENGELMOER, M., DIJK, K. van & TIMMERMAN, A. 1983. Vogels van de Friese Waddenkust. [Birds of the Frisian Wadden Sea coast.] F.F.F. rapport nr. 20, Leeuwarden. 104 pp. In Dutch with English summary. (Available for Dfl.10. - (incl. p & p). on giro no. 3982494 of Penningmr. FFF, Raadhuisplein 34, 9203 EB Drachten, The Netherlands.)
- ERCKMANN, W.J. 1983. The evolution of polyandry in shorebirds: An evaluation of hypotheses. In: S.K.Wasser (ed.), Social behaviour of female vertebrates. Academic Press, New York. pp. 113-168. See extensive summary in the Appendix of this list.
- ESPIN, P.M.J., MATHER, R.M. & ADAMS, J. 1983. Age and foraging success in Black-winged Stilts Himantopus himantopus. Ardea 71: 225-228. (c/o J.Adams, Dept. Zool., Univ. of Newcastle-upon-Tyne, NE1 7RU, UK.)
- FANG, O. 1982. Sighting of a Curlew Sandpiper. Ala. Birdlife 29: 8-9. (4731 Hurov Dr., Pensacola, FL 32507, USA.)

- FAVALORO, N.J. 1982. The Bar-tailed Godwit *Limosa lapponica*. Aust. Bird Watcher 9: 269-271. (199 Deakin Ave., Mildura, Victoria, Australia 3500.)
- FINCH, B.W. 1980. First record of Little Stint *Calidris minuta* for Papua New Guinea. Papua New Guinea Bird Soc. Newsl. No. 163-164: 10-15.
- FINCH, B.W. 1979. The Palearctic Wader presence of the Port Moresby area - 1979. Papua New Guinea Bird Soc. Newsl. No. 162: 4-26.
- FLEISCHER, R.C. 1983. Relationships between tidal oscillations and Ruddy Turnstone flocking, foraging and vigilance behavior. Condor 85: 22-29. (Dept. Biol. Sci., Univ. Calif., Santa Barbara 93106, USA.)
- FULLER, R.J. 1983. The relative growth of bill, tarsus and wing of Lapwing chicks in the Outer Hebrides. Ringling & Migration 4: 139-144. (BTO, Beech Grove, Tring, Herts. HP23 5NR, UK.)
- GAHURA, V. 1979. Zum Nisten des Grossen Brachvogels (*Numenius arquata*) an den Fluren des Unterlaufs des Flusses Morava. [On the nesting of Curlews along the river Morava.] Zpravy MOS 37: 55-64. In Czech with German summary. (Zalesna X/1359, CSR-76000 Gottwaldov, Czechoslovakia.) On 6 to 20 pairs of Curlew.
- GALBRAITH, C.A. & THOMPSON, P.S. 1981. (The Wood Sandpiper (*Tringa glareola*) breeding in Iceland.) Náttúrufræðingurinn 51: 164-168. In Icelandic with English summary. (4 Achagoil, Minard, by Inverarry, Argyll, Scotland, UK.)
- GALBRAITH, C.A. & THOMPSON, P.S. 1982. The Wood Sandpiper *Tringa glareola* breeding in Iceland, 1981. Dansk. Orn. Foren. Tidsskr. 76:72.
- GALBRAITH, H. & FURNESS, R.W. 1983. Breeding waders on agricultural land. Scott. Birds 12: 148-153. (96 Neilston Rd., Paisley, Strathclyde PA2 6EL, Scotland, UK.)
- GLOE, P. 1979. Über eine Variante des Nahrungserwerb erwachsener Säbelschnäbler (*Recurvirostra avosetta* L.). [On some variation in feeding habits of a juvenile Avocet.] Corax 7: 117-188. In German. (Mühlen Str. 10, 2223 Meldorf, W. Germany.)
- GLUSTCHENKO, YU.N. 1982. (Nesting waders in Khanka lake basin.) Ornithologija 17:162. In Russian.
- GOEDE, A.A. & NIEBOER, E. 1983. Weight variation of Dunlins *Calidris alpina* during post-nuptial moult, after application of weight data transformations. Bird Study 30: 157-163. (Dept. Anim. Syst. & Zoogeogr., Vrije Universiteit, de Boelelaan 1087, 1007 MC Amsterdam, The Netherlands.)
- GORDIENKO, N.S. 1982. (Of waders fauna in Naurzum reserve.) Ornithologija 17: 162-163. In Russian.
- GRAM, I. & LAURSEN, K. 1983. Saltvandssøen dannes! Fugle 3: 4-5. In Danish. (Game Biol. Stat., Kalø, DK 8410 Rønne, Denmark.) Popular piece on effects on waders of reclamation works near Højer.
- GRANT, G.S. 1982. Avian incubation: egg temperature, nest humidity, and behavioral thermoregulation in a hot environment. Ornithological Monographs No. 30, 75pp. AOU, Washington DC. (\$9). Detailed information on incubation of Black-necked Stilt, American Avocet, Snowy Plover & Killdeer.
- GRANT, P.J. 1983. Spotted Redshank flying with legs retracted. Brit. Birds 76: 136-137. (14 Heathfield Rd., Ashford, Kent TN24 8QD, UK.)
- GRATTO, C.L., COOKE, F. & MORRISON, R.I.G. 1983. Nesting success of yearling and older breeders in the Semipalmated Sandpipers, *Calidris pusilla*. Can. J. Zool. 61: 1133-1137. (Biol. Dept., Queen's Univ., Kingston, Ontario, Canada K7L 3N6.)
- GRISSEY, P. 1983. Observation d'un Vanneau sociable *Chettusia gregaria* (Pall.) en Dordogne. [Observation of a Sociable Plover in Dordogne, France.] Alauda 51: 231-233. In French (Rte. de Perigueux, Gabillou, 24400 Mussidan, France.)
- GROMADSKA, J. 1983. Results of bird ringing in Poland. Migrations of Dunlin *Calidris alpina*. Acta orn. 19: 113-136. (Ornithol. Stat., Polish Inst. Zool., Acad. Sciences, 80-680 Gdańsk 40, Poland.)
- HARRINGTON, B. 1983. The migration of the Red Knot. Oceanus 26: 44-48.
- HARRISON, J.G. 1982. Creating and improving inland wading bird habitat at Sevenoaks, England. In: D.A.Scott (ed.), Managing Wetlands and Their Birds. IWRB, Slimbridge. PP.137-142.
- HARVANCIK, S. 1981. Vorkommen des Halsbandwassertieters (*Phalaropus lobatus* L.) im Gebiet von Zahorská nizina bei Petrova ves. [Occurrence of Red-necked Phalaropes near Petrova ves.] Zpravy MOS 39: 135-136. In Czech with German summary. (Slovanská 9, CSR-95801 Partizánske, Czechoslovakia.)
- HEINS, R. 1982. Schlüpftermine und Schlüpferrfolg beim Kiebitz (*Vanellus vanellus*). [Hatching times and success in Lapwings.] Corax 9:46. In German. (Moorhusen 34, D-2200 Neuendorf, W. Germany.)
- HEISLER, F. 1983. Steppenkiebitz *Chettusia gregaria* im Lech-Donau-Winkel. [Sociable Plover in Lech-Donau-Winkel.] Anz. Orn. Ges. Bayern 22:113. In German. (Bäumenheimer Str. 14, 8850 Donauworth, W. Germany.)
- HERON, M. 1976. Waders and terns seen at the mouth of the Angabunga River and nearby beach at Aviara, 6 km south of Bereina, from August 1975 to April 1976. Papua New Guinea Bird Soc. Newsl. No. 125: 12-14. (Box 20, Bereina, Papua New Guinea.)
- HERON, M. 1977. First New Guinea record of the Asiatic Dowitcher. Papua New Guinea Bird Soc. Newsl. No. 129:9.
- HERON, S.J. 1978. Waders of the New Guinea region. Papua New Guinea Bird Soc. Newsl. No. 149-150: 8-15. (Box 20, Bereina, Papua New Guinea.)
- HERON, S.J. 1978. Waders of the Bereina district, Papua New Guinea. Papua New Guinea Bird Soc. Newsl. No.140-141: 5-8.
- HERRON, D. 1981. An albinistic Black-necked Stilt: a second record. West. Birds 12:103. (Nat. Hist. Mus., P.O.Box 1390, San Diego, CA92112, USA.)
- HERZOG, G. 1978. Zum früheren Vorkommen des Triels (*Burhinus oedicephalus* L.) im Kries Luckau. [On the past occurrence of Stone Curlews in Luckau.] Biolog. Studien Kries Luckau 7: 41-43. In German. (Jütebogger Str. 16, DDR-7962 Dahme, E. Germany.) From two to zero pairs.
- HJÁLMARSSON, Á.W. 1982. Vaðfuglar. [Waders.] In: Fuglar, Rit Landverndar 8, Reykjavik. pp. 117-148. In Icelandic. (c/o Landvernd, Skólavörðustíg 25, 101 Reykjavik, Iceland.) General account of waders in Iceland.
- HOCKEY, P.A.R. 1983. Aspects of the breeding biology of the African Black Oystercatcher. Ostrich 54: 26-35. (P.Fitzpatrick Inst., Univ. Cape Town, Rondebosch 7700, S. Africa.)

- HULSCHER, J.B. 1983. De snavel van de Scholekster, een verfijnd instrument. [The bill of the Oystercatcher, a refined instrument.] Vogels 3: 136-138. In Dutch. (Zool. Lab., Univ. of Groningen, Kerklaan 30, Haren, The Netherlands.)
- HUME, R.A. 1983. Whimbrels standing on overhead wires. Brit. Birds 76:232. (41 Sandy Rd., Potton, Beds., UK.) Observation in The Gambia.
- HUPPOP, O. & HARTWIG, E. 1983. Beziehungen zwischen Benthosorganismen und Küstenvögeln, dargestellt am Beispiel der Leibucht (Ostfriesisches Wattenmeer). [Relationships between benthic organisms and coastal birds as exemplified by the situation at Leybrucht, Ostfriesland's Wadden Sea.] J. Orn. 124: 318. In German.
- IYASHENKO, V.Yu. 1982. (Waders of Chagan-Uzun river basin (South-eastern Altai).) Ornithologija 17: 165-166. In Russian.
- JONES, E. 1983. The current reporting of wader sizes. Aust Bird Watcher 10: 28-32. (School Econ., La Trobe Univ., Bundoora, Victoria 3083, Australia.)
- KARAVAEV, A.A. 1982. (Waders nesting on Krivaya sand peninsula (Azov sea).) Ornithologija 17:166. In Russian.
- KIESER, J.A. 1983. Jizz of Spotted Sandpiper. Brit. Birds 76: 313-314. (Glenanda Shop. C., Vorster Ave., Glenanda, 2190 Johannesburg, S.Africa.)
- KIPP, M. 1982. Zur Situation des Grossen Brachvogels (Numenius arquata) und der Uferschnepfe (Limosa limosa) im Kreis Minden-Lübbecke. [On the situation of Curlew and Black-tailed Godwit in Minden-Lübbecke.] Charadrius 18: 57-60. In German. (Kuhdam 95, D-4540 Lengerich, W. Germany.) Decline in both species between 1975 and 1981.
- KLABNIK, L. 1979. Beobachtungen des Sanderlings (Crocethia alba Pall.) in der Umgebung von Sluknov. [Observations of Sanderlings near Sluknov.] Žpravy MOS 37: 127-128. In Czech with German summary. (Zelena 4, CSR-40801 Rumburk, Czechoslovakia.)
- KONDRATGEV, A.Y. 1983. [Biology of waders in tundras of NE Asia.] Moskva:191 pp. In Russian, no English summaries. Description of 33 species.
- KOOIKER, G. 1983. Der Kiebitz (Vanellus vanellus) - Zur Ökologie flugbetriebsgefährdender Vogelarten. [The Lapwing - On the ecology of aircraft-endangering bird species.] Vogel und Luftverkehr 3: 52-59. In German. (F.B.5, Postfach 4469, D-4500 Osnabrück, W. Germany.)
- KRASNOV, Yu.V. & BIANKI, V.V. 1982. (Material on waders in Pechora delta.) Ornithologija 17:168. In Russian.
- KRIVONOSOV, G.A. 1982. (New nesting species of waders in Volga avandelta.) Ornithologija 17:168. In Russian.
- KUSCHERT, H. 1983. Wiesenvogel in Schleswig-Holstein. [Meadowbirds in Schleswig-Holstein.] Husum Druck- und Verlagsgesellschaft, Husum: 120pp. In German. (c/o Postfach 1480, 225 Husum, W. Germany.)
- LANGRIDGE, H.P. 1982. Spin walking by a Wilson's Phalarope. Fla. Field Nat. 10: 76-77. (1421 W. Ocean Ave., Lantana, FL 33462, USA.)
- LENSCH, A. 1981. Eine weitere Beobachtung des Gelbschenkels (Tringa flavipes) in Dithmarschen. [A further observation of Lesser Yellowlegs in Dithmarschen.] Corax 7:181. In German. (Gravensteiner Str. 1e, 2223 Meldorf, W. Germany.)
- LEPAUMIER, L. 1982. (Identification of a Buff-breasted Sandpiper killed in Normandy.) Cormoran 4: 236-237. In French with English summary. (Montgothier 50460, Isigny le Baut, France.)
- LIPSBERGS, J. 1981. [On the first reliable breeding record of Greenshank Tringa nebularia (Gunn.) in Latvia.] In: The Rare Plants and Animals 1981 (Riga, Latvia) pp.42-45. In Latvian with Russian summary. (Biol. Inst., Riga, Latvia, USSR.)
- MACHIKUNAS, A.S. 1982. (Some aspects of nesting of marsh and water birds at Kaunas reservoir.) Ornithologija 17: 101-105. In Russian.
- MADGE, S.C. 1983. Woodcock catching flying insects from the ground. Brit. Birds 76:312. (2 Church Row, Torpoint, Cornwall PL11 3EH, UK.)
- MANNAERT, A. 1983. (Autumn migration of waders at Dendermonde from 15.08 to 15.10.82.) Veldornithol. Tijdschr. 6: 59-62. In Flemish with English summary. (Hertstr. 2, 9340 Dendermonde, Belgium.)
- MARKS, J.S., KUNTZ, R.C. II, & LARSON, A.G. 1982. Photographic record of the Red Knot in Idaho. Murrelet 63:72. (Mont. Coop. Wildl. Res. Unit, Univ. Mont., Missoula 59812, USA.)
- MARSHALL, W.H. 1982. Minnesota Woodcock. Loon 54: 203-211. (7248 Oakmont Dr., Santa Rosa, CA 95405, USA.)
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APPENDIX

W.J. ERCKMANN. 1983. The evolution of polyandry in shorebirds: an evaluation of hypotheses. Pp 113-168 in 'Social behaviour of female vertebrates', ed. S.K.Wasser. Academic Press, New York.

Summary (by C.M. Lessells)

Polyandry occurs in more species of shorebirds than in all other bird species combined, and is more common among shorebirds than is polygyny. Since shorebirds also exhibit a wider range of mating systems than any other avian order, they provide an excellent opportunity to study the selection pressures favouring different mating systems, and in particular polyandry.

The major part of this paper is devoted to assessing five hypotheses for the evolution of polyandry. Each of the hypotheses is evaluated by testing either the assumptions or predictions from the hypothesis. The latter involves either experimental manipulations (the author's own work with Western Sandpiper *Calidris mauri*) or interspecific comparisons of monogamous and polyandrous species. The hypotheses and conclusions drawn are:-

1) The stressed female hypothesis (Graul et al. 1977)

Hypothesis: When food is scarce, female reserves are so depleted after laying that it pays the female to desert at this stage. Males then assume all the parental care unless the risks to themselves are excessive. Male parental care leads to competition among females for mates, and thus to the evolution of sex-role reversal, but not polyandry.

Evidence:

- a. If males are able to incubate alone in species where the female is stressed, the males of monogamous species (in which the female is not stressed) should easily be able to do so. Removal experiments with Western Sandpipers showed that this is not so.
- b. Inter-specific comparisons of time and energy budgets suggest that food is more abundant for species which have exclusive male incubation.

Conclusion: To the contrary of the hypothesis, food scarcity should generally select for bi-parental care.

2) The differential parental capacity hypothesis (Graul 1974, Maynard Smith, 1977)

Hypothesis: Laying reduces the physical condition of the females to the extent that, although they may still participate in bi-parental incubation, they would not be able to assume sole responsibility for incubation if their mate deserted. Thus females, but not males, are in a position to gain from early desertion. The advantages to a deserting female might include the opportunity to search for other mates or to leave the breeding grounds early.

Evidence:

- a. Mate removal experiments showed that female Western Sandpipers are less able to sustain uni-parental incubation than males.
- b. Time and energy budgets suggest that female shorebirds have a higher cumulative investment than males at the end of laying. However, the resources for this investment appear to be derived from daily food intake rather than reserves, and there is little evidence that laying results in a reduction of lipid and protein reserves.

Conclusion: The two lines of evidence are contradictory. If females are in poorer condition than males at the end of laying, this must result from a more subtle reduction in condition than the depletion of lipid and protein reserves.

3) The replacement clutch hypothesis (Jenni 1974, Emlen & Oring 1977)

Hypothesis: When there is a high rate of nest failure, there is selection for increased ability to replace lost clutches, and hence for female emancipation from incubation duties. Once males are mostly or entirely responsible for incubation, females might also gain by competing for additional males as well as replacing lost clutches. This hypothesis implies that males benefit by female emancipation provided that they are not deserted.

Evidence:

- a. Rates of nest loss do not differ between polyandrous and other shorebird species, whether or not the latitudinal increase in nesting success is controlled for.
- b. There is little evidence that nesting is more frequent in polyandrous species.
- c. Intra-specific (Spotted Sandpipers *Actitis macularia*) and inter-specific comparisons show no difference in the delay from clutch loss to relaying by females who incubate and those who are emancipated from such duties.

Conclusions: There is no indication that emancipation from incubation increases the ability of females to replace lost clutches. Males, rather than gaining from such emancipation, appear to lose because of the consequent increase in their own investment in incubation. However, frequent nesting failure might select for polyandry by increasing the pool of males available for mating at any time.

4) The fluctuating food hypothesis (Parmelee & Payne, 1973, Graul 1974)

Hypothesis: In an environment with wide fluctuations in food supply, females should capitalize on abundant food by laying several clutches and refrain from parental care in poor feeding conditions.

Evidence:

- a. Temporary food abundance does not seem to be a pre-requisite to laying multiple clutches or to replacement laying in monogamous species.
- b. Annual variance in the number of clutches produced by species with multiple clutching and by polyandrous species is not extreme or related to food supply.

Conclusion : This hypothesis can be tentatively rejected.

5) The stepping-stone model (Jenni 1974, Pitelka et al. 1974, Pienkowski & Greenwood 1977)

Hypothesis: This hypothesis is concerned with the evolutionary route, rather than the ecological selection pressures, producing polyandry. Polyandry evolved in species that primitively had a double clutching system (e.g. Temminck's Stint *Calidris temminckii*). A trade-off in the female between incubation ability and the ability to compete for further mates resulted in sex-role reversal and polyandry.

Evidence:

- In arctic sandpipers synchrony of laying implies little opportunity for females to remate. There is no convincing reason why an increase in competitive ability should decrease the ability of females to incubate alone.
- There is no close taxonomic relationship between double clutching and polyandrous species.
- In some polyandrous species there is a tendency for females to share incubation with their mates.

Conclusion : Sex-role reversal did not evolve via double-clutching.

Double clutching itself could have evolved (i) from double brooding in monogamous species, or (ii) through mate desertion and attempted polygamy. It is possible that double clutching evolved via the first route in Mountain Plovers *Charadrius montanus* (where mate change does not normally occur between clutches) and by the second route in sandpipers.

Other environmental influences on the evolution of polyandry that are discussed in this paper include the possibility that single parents have greater reproductive success than two parents, that long breeding seasons may increase the opportunities for polyandry and short seasons increase the chance for the female to desert without risking her mate deserting in response, that global or local sex ratios affect the mating possibilities, and that female dominance and territoriality are related to the reversed sex dimorphism of many shorebirds.

Characters that probably favoured the frequent evolution of polyandry in shorebirds include male parental care, the need for only one parent to tend the young, and small clutch size and the ability of females to lay many clutches.

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HUMBER OIL SPILL

The Humber Estuary in eastern England has reached the newspaper headlines on several occasions in the last few months. The efforts of the Greenpeace organisation to publicise the serious effects of pollution from a Titanium plant at Grimsby (see *BBC Wildlife* 1983 1: 50-51), were rather overshadowed by the spillage of 6000 tonnes of crude oil into the estuary. The spillage occurred when an incoming, fully-laden tanker hit a pier at Immingham, on the southern shore of the estuary, on 28 September 1983. The resultant slick polluted a large proportion of the estuary.

The incident is of considerable interest, as it is the first time that such extensive oiling has occurred within a British estuary. The incident happened during a period of heavy wader migration. A coordinated wildfowl and wader count just prior to the spillage, made by the Birds of Estuaries Enquiry (BoEE) counting teams, revealed over 22,000 waders and 7,000 wildfowl on the estuary. Sample counts following the oiling showed that up to 20% of all birds counted were oiled. This included many waders. Less than 150 corpses, mainly gulls, were found, although 400 live birds were reported to be 'seriously oiled' and presumably dying.

It thus seems that the immediate effects of the spillage were surprisingly slight, although we cannot be sure how many corpses of the smaller species of waders were not found during searches. The longer-term consequences may, however, be more serious, since the combined effects of the oil and the dispersants used to break it up, resulted in large-scale mortality of intertidal invertebrates, thus reducing the food supply of waders. The full scale of this mortality is not yet known, although data is being collected. The BoEE coordinated counts will continue throughout the winter, to monitor the effects on the Humber bird populations.

Mike Moser, British Trust for Ornithology, Beech Grove, Tring, Herts. HP23 5NR, U.K.