First record of black-necked swan *Cygnus melancoryphus* in South Shetland and Antarctica

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The recurring presence of biologists on Antarctic peninsula in recent years has resulted in several new records extending the ranges of southern temperate birds to Antarctica. The following have recently been recorded as occasional visitors: *Anas georgica* on Gama Island (Di-Paola 1975), *Bubulcus ibis* on Greenwich Island, *Aptenodytes patagonicus* on King George Island (Schlatter and Duarte 1980) and *Calidris fuscicollis* on Livingston Island (Gajardo and Yañez 1982).

During the development of the Antarctic Tetrapods Ecology project, sponsored by the Chilean Antarctic Institute, we resided during January 1989 in Byers Peninsula, Livingston Island, South Shetland Islands (62°27'S, 60°47'W). On January 14, 15, 16 and 18 we saw and photographed three specimens of black-necked swan *Cygnus melancoryphus* (Molina). The birds were located in a coastal lagoon and at Byers Bay, and were apparently feeding. Colleagues have since informed us of the presence of seven other swans of this species near Teniente Marsh Station, King George Island. At least four were seen on Deception Island during late January and early February, and Dr Bernard Stonehouse (personal communication) recorded the same species along the west coast of Antarctic Peninsula as far south as Petermann Island (65°10'S) during February.

Tierra del Fuego is normally regarded as the southernmost locality for *C. melancoryphus* (Humphrey and others 1970; Araya and Millie 1986; Clark 1986; Venegas 1986). There they are regular visitors, very abundant in summer, and occasionally recorded as nesting (Humphrey and others 1970). They have not previously been recorded on Livingston Island or elsewhere south of the Drake Passage. We believe that the presence of these birds may have resulted from unusual winds during the preceding weeks.

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References

Araya, B. and Millie, G. 1986. *Guia de campo de las aves de Chile.* Santiago, Editorial Universitaria.

Clark, R. 1986. *Aves de Tierra del Fuego y Cabo de Hornos, Guia de campo.* Buenos Aires, Literature of Latin America.

Di-Paola, R. 1975. Presencia de Anas georgica spinicauda Delacour 1959, en Puerto Paraiso, Antartica. *Contribucion del Instituto Antartico Argentino* 199.

Gajardo, M. and Yañez, J. 1982. Primer registro de *Calidris fuscicollis* (Vieillot 1819) en Isla Livingston, Shetland del Sur, Antartica Chilena. (Aves: Scolopacidae). *INACH-Series.Cientifico* 29: 69–71.

Humphrey, P. S., Bridge, D., Reynolds, P. W. and Peterson, R. T. 1970. *Birds of Isla Grande (Tierra del Fuego).* Washington, Smithsonian Institution.

Schlatter, R. and Duarte, W. 1980. Nuevos registros ornitologicos para la Antartica Chilena. *INACH-Series Cientifico* 27: 45–48.

Venegas, C. 1986. *Aves de Patagonia y Tierra del Fuego chileno argentina.* Punta Arenas, Ediciones Universidad Magallanes.

Reviews

BI-POLAR ECOLOGY

POLAR ECOLOGY. Stonehouse, Bernard. 1989. Glasgow, Blackie: New York, Chapman and Hall (Tertiary Level Biology). 222 p, illustrated. Hard cover ISBN 0-216-92480-4, £27.00; soft cover ISBN 0-412-01711-3, £12.95.

This book comes as a happy surprise. While other recent treatises on polar ecology concentrate on the Antarctic only, or on certain habitats like the polar oceans, this is a courageous attempt to cover the ecology of both polar regions. Furthermore it is written by one author only, instead of being a multi-author compilation. Stonehouse meant his *Polar ecology* for advanced students, but it is written in a non-technical language which will attract also a broader public. Schoolteachers in biology and geography should read it to introduce more of polar life into their class work. The book is based on a broad knowledge of recent literature, mainly of the 1960s and 70s but with a good addition of very recent publications. Many non-English citations are included too, which is particularly important for the Arctic.

Stonehouse focuses " ... on the environments, on the responses of plants and animals to the physical conditions in which they find themselves — and effects of environmental constraints on their communities". With this in mind he devotes more than one third of the book to describing the physical properties of polar regions. The introductory chapter on the various boundaries of the Arctic and Antarctic reflects different aspects of temperature and light regime and of ocean circulation. Descriptions of polar climates reveal the differences within and between the Arctic and Antarctic. Special attention is

given to the balance between incoming short wave radiation and outgoing long wave radiation and resulting heat budgets. This leads into chapters on terrestrial and freshwater environments, where conditions are determined by temperature, wind and precipitation. Soil formation, vegetation and fauna of arctic land masses show a variety and richness that is nowhere shared by antarctic lands, even in lower latitudes. The 35 pages on polar marine environments are based on the few comparative studies and on specific reviews of either arctic or antarctic seas. The marine chapter is without over-simplification but avoids overburdening the text by facts. The author's partiality for polar mammals and birds results in a certain imbalance. More would have been welcome on sea ice biota and on the different regions of polar waters as determined by seasonal changes in the extent of the pack ice.

A brief chapter on survival in polar regions concentrates mainly on land organisms which have immigrated from the temperate zone and are pre-adapted to polar life. For plants and arthropods, aridity and extreme seasonality of light conditions are more important than low temperature. In polar homeotherms, including man, temperature and wind chill are the determinants for survival and metabolic demands. The chapter on man and the polar regions deals not only with physiological aspects of human life in the cold, but also with arctic folk — their circumpolar distribution and integration into the arctic ecosystem, and recent disturbances by additional exploitation. The 200 years' history of exploration, and the exploitation and management of the Antarctic, are presented in a brief and comprehensive manner.

A textbook of a little over 200 pages on the broad topic of polar ecology cannot cover all major aspects equally well. Stonehouse decided against including the biogeography and evolution of polar organisms, communities and ecosystems, and consideration of primary and secondary productivity and its relevance to exploitation, sedimentation and to global climate. Climatic changes, both long-term and short-term, affect the glaciation of polar land masses and the distribution of sea ice and oceanic circulation, and might be keys to the understanding of present-day polar flora and fauna. Furthermore, comparative life history studies of certain taxonomic groups will reveal differences between Arctic and Antarctic in evolution, and in responses to different environmental conditions. So there are more text books still to be written.

Stonehouse's book is a good start to a new comprehensive and comparative bi-polar approach. It lays the foundation by emphasizing descriptions of the environmental conditions. Several of the graphs will be used by many future lecturers on the subject of polar environments. The photographs are well-chosen but their reproduction is no better than could be expected from the quality of the paper. Why not rely on line drawings, etc., in such books which must be produced at reasonable cost? (G. Hempel, Alfred-Wegener-Institut für Polar- und Meeresforschung, Columbus-straße, Bremerhaven D-2850, FRG.)

RUSSIAN-AMERICAN TELEGRAPH

CONTINENTAL DASH: THE RUSSIAN-AMERICAN TELEGRAPH. Neering, R. 1989. Ganges, BC, Horsdahl and Schubart. 230pp, illustrated, hard cover. ISBN 0-920663-07-9. Can $22.95.

One of the great undertakings by private enterprise during the 19th century was the attempt to build an overland telegraph line across northwestern North America and Siberia, to link the United States with Europe and Great Britain. The project was conceived in the apparent failure of Cyrus Field's transatlantic cable in 1858, and abadoned eight years later because of Field's eventual success in making the undersea cable work.

Hiram Sibley, head of the Western Union Telegraph Company in the United States, raised the capital. As his superintendent, he hired Colonel Charles S. Bulkley, a veteran of the military telegraph service of the Union Army in the American Civil War. Bulkley, from his headquarters in San Francisco, marshalled his forces and equipment and dispatched separate expeditions to what was truly *terra incognita* — the wilderness of British Columbia, then a crown colony, and to Russian America and eastern Siberia, where his men coped under extremely primitive conditions.

The intriguing character was Perry McDonough Collins, a San Francisco business man of the post-gold-rush era. Enamored with the possibility of developing the trans-Pacific trade, he wangled an appointment as the US commercial agent for the Amur River area in eastern Siberia. From Moscow, he crossed Russia and Siberia by sleigh, and dreamed of building a railroad and telegraph line along that route. After returning to the United States, he negotiated for concessions from the British and Russian governments, and sold his rights to Sibley and Western Union. One wonders if the Western Union Telegraph Extension, as it was called, would have failed from the sheer immensity of the job and the difficulties of communication at that time. The only portion of the line that ever functioned was in central British Columbia, and Western Union sold it to the B.C. government. The costs of the ill-fated enterprise were eventually assumed by the company's shareholders. Collins himself came out of it well fixed, living his last years as a near-recluse in a New York hotel and dying in 1900. This is a little-known story well told. (Jerome F. Sheldon, 525 East Roy Street, Apartment 203, Seattle, Washington 98102, USA.)

RECORD OF THE ICE SHEETS

THE ENVIRONMENTAL RECORD IN GLACIERS AND ICE SHEETS. Oeschger, H. and Langway, C. C., Jr. (editor). 1989. Chichester, John Wiley. 403 p., illustrated, hard cover. ISBN 0-471-92185-8. £47.50.

For the last 25 years ice core research has established itself as one of the most successful techniques available for obtaining environment and paleoenvironment information. This book, subtitled 'Report of the Dahlem Workshop on the Environmental Record in Glaciers and Ice Sheets' results from a workshop organized by Dahlem