

National Cataloguing Unit for the Archives of Contemporary Scientists under the guidance of the Royal Society's National Committee for the History of Science, Medicine and Technology

Catalogue of the papers and correspondence of

# NIKOLAAS TINBERGEN FRS

(1907-1988)

Compiled by Peter Harper and Timothy E. Powell

Deposited in the Department of Western Manuscripts, Bodleian Library, Oxford

> All rights reserved University of Bath 1991

Catalogue of the papers and correspondence of

# NIKOLAAS TINBERGEN FRS

(1907-1988)

Compiled by Peter Harper and Timothy E. Powell

Deposited in the Department of Western Manuscripts, Bodleian Library, Oxford

> All rights reserved University of Bath 1991

The work of the National Cataloguing Unit for the Archives of Contemporary Scientists, and the production of this catalogue, are made possible by the support of the following societies and organisations:

E P Abraham Cephalosporin Fund
The British Library
British Telecom plc
The Geological Society
The Institute of Physics
The Royal Society
The Royal Society
The Society of Chemistry
The Society of Chemical Industry
The Wellcome Trust
The Wolfson Foundation

NOT ALL THE MATERIAL IN THE COLLECTION

IS YET AVAILABLE FOR CONSULTATION.

ENQUIRIES SHOULD BE ADDRESSED IN THE

FIRST INSTANCE TO:

KEEPER OF MANUSCRIPTS
BODLEIAN LIBRARY
OXFORD

LIST OF CONTENTS		Items	Page
GENERAL INTRODUCTION			4
SECTION A	BIOGRAPHICAL	A.1 - A.91	11
SECTION B	RESEARCH	в.1 - в.39	22
SECTION C	LECTURES, PUBLICATIONS AND BROADCASTS	C.1 - C.248	27
SECTION D	AUTISM	D.1 - D.196	53
SECTION E	CORRESPONDENCE	E.1 - E.52	65
INDEX OF CORRESPONDENT	S		71

GENERAL INTRODUCTION

PROVENANCE

The papers were received from Professor Tinbergen's widow, Mrs E A Tinbergen in April and October 1989. Additionally the typescript journal of the 1932-33 Greenland expedition was received from Miss Janet Tinbergen and the photograph of the March 1990 Tinbergen Legacy meeting in Oxford from Dr Marian Dawkins.

#### OUTLINE OF THE CAREER OF N TINBERGEN

Nikolaas (Niko) Tinbergen, one of the founding fathers of modern ethology, was born in The Hague on 15 April 1907. After secondary schooling in which he neglected the traditional academic subjects in favour of his sports and natural history interests, he spent a couple of months in the autumn of 1925 at the Rositten observatory in East Prussia which pioneered the scientific ringing of birds. This experience of biological fieldwork persuaded Tinbergen to enrol as a student at the University of Leiden where he specialised in zoology. In 1931 he was appointed 'assistent' in the Leiden Zoology Department and in 1932 he was awarded his PhD from Leiden for his homing studies on wasps of the genus Philanthus. Married in 1932 to Elizabeth Amelie Rutten, Tinbergen and his wife then spent two summers and a winter among the Anmagssalingmiut Eskimos of East Greenland studying the snow bunting, red-necked

phalarope and husky. Returning to Leiden he taught experimental zoology and especially animal behaviour until 1949 by which time he was Professor and Head of Department. His career was interrupted during the Second World War when he was imprisoned as a hostage by the German occupation authorities.

During his time at Leiden Tinbergen developed laboratory work, in which the three-spined stickleback proved a particularly successful experimental animal, and field studies initiating projects on wasps, butterflies and hobbies at an annual camp which he organised for his students among the sandhills of Hulshorst. His work on the breeding behaviour of herring gulls also dates from this period and, like the stickleback research, became one of the classics of ethology. In 1936 Konrad Lorenz, who was later to share the Nobel Prize with Tinbergen and Karl von Frisch, visited Leiden. Lorenz and Tinbergen immediately recognised their common interests and Tinbergen spent the spring of 1937 working with Lorenz at the Lorenz family home at Altenberg near Vienna. This association was to have the greatest importance for their science. In 1938 Tinbergen made his first attempt to introduce the ethological approach to animal behaviour studies to the English-speaking world on a visit to the USA. He pursued this mission with great dedication and success after the war.

As an essential step in this process Tinbergen resigned his professorship at Leiden in 1949 and accepted a less well paid and less prestigious lectureship in A C Hardy's department at Oxford where he remained for the rest of his career. He was appointed Professor of Animal Behaviour in 1966 and retired in 1974. At Oxford he lectured with great success on animal behaviour to zoology

and psychology students and built up a research group that had a profound influence on the development of ethology round the world. In particular his research focused on the adaptedness of behaviour; the work on the herring gull initiated in the Netherlands developed into comparative studies of many gull species. Tinbergen's most influential book The Study of Instinct, based on lectures given at the American Museum of Natural History in 1947, appeared in 1951 and Social Behaviour in Animals followed in 1953. In keeping with his aim of spreading the ethological message he made frequent visits abroad to attend conferences and also accepted the occasional one-term visiting professorship. Two of his best books were written for the educated layman The herring gull's world (1953) and Curious naturalists (1958) and in the 1960s he devoted much effort to making scientific films. One of these, 'Signals for survival', made with Hugh Falkus, won the Italia prize for documentary television films.

In the 1960s Tinbergen became increasingly preoccupied with the implications of the ethological approach for man. One aspect of this was his support for the initiative of Hardy's successor, J W S Pringle, to establish at Oxford a new honours course in "The It is reflected also in the titles of his Human Sciences". inaugural lecture as Professor of Animal Behaviour 'War and peace in animals and man' (1968) and of his Royal Society Croonian Lecture 'Functional ethology and the human sciences' (1972). Furthermore Tinbergen was interested in science and society relationships and felt it was the duty of the scientist to draw attention to man's increasing disadaptation to his environment and suggest ways in which he might be readapted. Tinbergen lectured on this topic on a number of occasions but put aside a book on the subject unfinished to concentrate his energies in retirement on a more specific application of ethological methods to human behaviour. For over

ten years Tinbergen and his wife collaborated on a study of the serious mental disorder childhood autism, publishing the results of their enquiry into its nature, ontogeny and treatment, Autistic children - new hope for a cure, in 1983.

Tinbergen received many honours and awards in recognition of his contribution to ethology. In addition to the Nobel Prize for Physiology or Medicine (1973), he received the Swammerdam Medal, awarded only every ten years, and honorary degrees from Edinburgh and Leicester. He was elected to the Fellowship of the Royal Society (1962) and to national academies in the Netherlands, Germany and the USA. Tinbergen died in Oxford in 1988.

For a more detailed account of the life and career of Tinbergen see the memoir by R A Hinde (Biographical Memoirs of Fellows of the Royal Society, 36, 1990). For Tinbergen's own autobiographical account see D A Dewsbury (ed). Leaders in the study of animal behavior (1985).

#### DESCRIPTION OF THE COLLECTION

The material is presented in the order given in the List of Contents. The collection includes important biographical material and records of Tinbergen's research, lectures and publications, and later interest in childhood autism. Only a small proportion of what must have been a very extensive general scientific correspondence survives, and there is virtually no material relating to visits and conferences or professional affiliations such as learned societies.

Section A, Biographical, is particularly noteworthy for Dutch material before the postwar move to Oxford. There are, for example, letters from East Prussia 1925, Greenland 1932-33, Altenberg 1937 and the hostage camp 1942. The wartime internment is also represented by Tinbergen's portrait drawings of his fellow hostages. There is material relating to the 1973 Nobel Prize, including documentation of his use of the prize money to support research projects by others, and of his advocacy of the Alexander Technique in his Nobel Lecture. The section also includes the famous 1937 photograph of Lorenz with his family of goslings, the Dutch manuscript text and drawings for Tinbergen's children's story about Kliew the seagull (New York 1947 and the Netherlands 1948), and the drawings for his second children's story The Tale of John Stickle (London 1954).

Section B, Research, provides documentation of field observations and laboratory experiments in the Netherlands and

England. The field notes, in notebooks and on loose pages, date from 1928, include observations of wasps, hobbies, gull species etc., and are characterised by Tinbergen's thumb-nail sketches of the subjects of his observations. The laboratory experiments relate to stickleback research.

Section C, Lectures, Publications and Broadcasts, is the largest in the collection. There are records of both Tinbergen's university teaching and invitation and public lectures. Although there are a few items from Leiden almost all the material relates to Tinbergen's career at Oxford and includes his contributions to the new Honour School of Human Sciences. There are drafts for scientific papers, illustrative material including photographs for Tinbergen's principal postwar books and a little correspondence with publishers and editors. The drafts include some unpublished material, for example, the unfinished book on modern man's disadaptation with his environment. Most of the broadcasts material relates to television film documentaries including the Italia Prizewinner 'Signals for survival'.

Section D, Autism, provides very extensive documentation of Tinbergen and his wife Elisabeth's investigation of this serious mental disorder in children. There is correspondence 1970-88 with ethologists, psychologists, psychiatrists, therapists and others responsible for the care and treatment of autistic children, drafts of lectures, articles and especially the 1983 monograph, printed and duplicated background material, and case histories.

Section E, Correspondence, is slight. Much of the correspondence dates from after Tinbergen's official retirement in 1974 and there are virtually no extended exchanges with colleagues.

The correspondence with Konrad Lorenz, Ernst Mayr and Tinbergen's brother Jan, who was awarded the 1969 Nobel prize for economics, although disappointing in extent, is probably the most significant.

There is also an index of correspondents.

#### LOCATION OF OTHER MATERIAL

A collection of Tinbergen's photographs has been deposited in the Rijks Voorlichts Dienst- Foto en Film archief, Anna Polownastraat 76, The Hague, Netherlands.

#### ACKNOWLEDGEMENTS

We are very grateful to Mrs E A Tinbergen, Miss Janet Tinbergen and Dr Marian Dawkins for making material available and to Dr R Roell and Dr Joost Tinbergen for advice and information.

Peter Harper
Timothy E Powell
Bath 1991

SECTION A BIOGRAPHICAL A.1 - A.91

A. 1, A.2	Obituaries and tributes
A. 3-A.12	Interviews and autobiographical writings
A.13-A.70	Career, honours and awards
A.71-A.88	Drawings
A.89-A.91	Photographs

#### Obituaries and tributes

A.1 The Times; Independent (Aubrey Manning).

Folder also includes obituary of Tinbergen's brother Lukas who died in 1955.

A.2 80th birthday tributes in German and Dutch newspapers, 1987.

'Tinbergen's Legacy', a review of The Study of Instinct (first published 1951 and reissued 1989 shortly after Tinbergen's death) by T J Roper, Trends in Ecology & Evolution, October 1989.

## Interviews and autobiographical writings

A.3 Brief correspondence <u>re</u> biographical entry in Encyclopedia Hebraica 1965.

Brief correspondence with C J Meyers  $\underline{\text{re}}$  interview on scientific creativity 1966-67.

- A.4 'Abbreviated Curriculum vitae Nikolaas Tinbergen', nd 1974 or later.
  - 'Animal Behaviour Research Group in the Zoologisch Laboratorium, University of Leiden, 1934-1949' (lp typescript) and 'Animal Behaviour Research Group in the Department of Zoology, University of Oxford, 1949-1974' (3pp typescript). Enclosures in letter to W H Thorpe of 8 September 1976, written in reply to request for information.
- A.5 A.8 Interview with M Salomon.
- A.5 Correspondence with M Salomon of Prospective et sante publique and E Goldsmith of The Ecologist, 1980-81.
- A.6 French text of interview.
- A.7 English text with ms additions and corrections by Tinbergen.
- A.8 Corrected English text for MacMillan Publishing Co, New York, with related correspondence 1981.
- A.9 A.11 'Scientific autobiography 1982'. Contents of folder so inscribed.
- A.9 Correspondence with D A Dewsbury <u>re</u> a volume of autobiographies in animal behaviour, 1981-82, 1986.

The volume was published as Dewsbury (ed.), <u>Leaders</u> in the Study of Animal Behavior: <u>autobiographical</u> <u>perspectives</u>, <u>Lewisburg</u>, PA, USA: <u>Bucknell University</u> Press, 1985.

- A.10 Tinbergen's contribution to the volume. 54pp typescript + references.
- A.11 Offprint.

A.12 'Summary of N Tinbergen's views (1982 as seen by himself) on his contribution to the study of behaviour'. 2pp typescript.

#### Career, honours and awards

- A.13 Ms poem written for Tinbergen and dated 'Sint Nikolaas 1920'; rough draft.
- A.14 Five letters from Tinbergen to his family from Rossitten, East Prussia, 27 August, 5, 19, 22 and 30 September 1925, and one letter from Tinbergen to his parents from Nidden, East Prussia, 25 September 1925.

The letters are accompanied by a note by Mrs E A Tinbergen:

After finishing High School Niko did not really know what he wanted to do, whether to train as a gym teacher or read biology at University.

A friend of his parents Prof. Ehrenfest advised his parents to send Niko for some months to the "Rossitten Vogelwarte" in what was then East Prussia and to get acquainted with other trends in biology from those he was bored with.

Niko was then 18 and came back after 3 months completely convinced that that was what he wanted to do.

The Vogelwarte Rossitten was the observatory at which the scientific ringing of birds was pioneered (R A Hinde, 'Nikolaas Tinbergen', Biographical Memoirs of Fellows of the Royal Society, 36, 550).

A.15 Three postcards depicting 'Krähenfang auf der kurischen Nehrung' East Prussia. One dated Rossitten 6 October 1925.

- A.16 Letter from R ?Steinerb to Tinbergen's father on his son's relations with Professor Thienemann during his stay at the Vogelwarte Rossitten, 20 October 1925. In German.
- A.17 'Wanderkarte von der kurischen Nehrung', East Prussia.
- A.18 Four letters from Tinbergen to his family, 31 August 1927, 6 and 8 August 1929 and 11 December 1934.
- A.19
  Letter from the Dutch ornithologist F Haverschmidt to Tinbergen, 5 May 1930; letter from the Director of the Amsterdam Zoo A F J Portielje to Tinbergen, 4 September 1931; draft of letter from Tinbergen and Luuk Tinbergen (brother) to the German ornithologist Uttendörfer 19 October 1931; letter from Jos [van Room, later Baerends] 20 July 1935; letter from G P Baerends, 28 July [1935].
- A.20 A.41 Greenland expedition 1932-33.

Tinbergen, with his newly married wife Elizabeth Amelie, spent a year in Greenland with the Dutch expedition of the International Polar Year (1932-33).

- A.20 A.26 Correspondence from E A and N Tinbergen in Greenland to the Tinbergen family in The Netherlands, July 1932 August 1933. There is also correspondence between Tinbergen's parents and the Scottish trawler captains and others who forwarded letters from Greenland. Some of the letters are accompanied by notes by Mrs E A Tinbergen.
- A.20 Letter from E A Tinbergen to her husband's family written just before sailing for Greenland (postmark on envelope, Copenhagen, 10 July 1932); three family letters from the Tinbergens, on board the 'Gertrud Rask', 10, 14 and 19 July 1932; postcard from T van Lohuizen to the Tinbergen family, The Hague, 23 July 1932.

- A.21 Postcard to Tinbergen's father, The Hague, 4 August 1932; two family letters from Greenland, 16 August [1932] and ?14 September 1932; letter from T van Lohuizen to Tinbergen's father, The Hague, 26 August 1932; contents of envelope addressed to Tinbergen's father: letter from the Grønlands Styrelse, Copenhagen, 12 September 1932 and draft reply, 29 October 1932 (both in Danish), and draft letter of thanks for forwarding a letter 'from our children in Greenland' (in English).
- A.22 Telegram, letter and 'brief-telegram' from Greenland dated 5, 6 and 24 October 1932; letter from Danish captain E Mikkelsen to Tinbergen's mother, 17 October 1932 (in Danish with Dutch translation) and draft reply dated 30 October 1932 (in Danish); two draft letters from Tinbergen's mother to Scottish trawler captains, 29 October and 11 November 1932 (in English).
- A.23 Letter from Captain W McPherson to Tinbergen's mother,
  Aberdeen, 4 November 1932; postcard from the Grønlands
  Styrelse, Copenhagen, 9 November 1932; letter from
  Tinbergen to his family, 23 August 1932 (delivered in
  envelope postmarked Copenhagen 18 November 1932 and
  stamped Grønlands Styrelse); 'Brief-Telegram ontvangen
  22-11-'32'.
- A.24 Letter from E A Tinbergen's mother in Cuba to N Tinbergen's mother, 15 January 1933; telegrams from Greenland, 21 January, 4 February, 11 February, 11 April and 27 April 1933.
- A.25 Telegram from Greenland dated 10 June 1933; letter from E A Tinbergen's mother to N Tinbergen's mother, Cuba, 28 June 1933; letter from daughter of Captain Watson to Tinbergen's father, Aberdeen, 3 July 1933; letter from Greenland, 4 August 1933; letter from Captain Watson to Tinbergen's parents, 25 August 1933.
- A.26 Ms notes, sketch map, photograph etc., found with Greenland correspondence.

A.27 - A.39	Contents of ring binder: contents list, typescript copies of letters, journal, etc.
A.27	Contents list, typescript copies of four letters (page 1 of the first letter is missing).
A.28 - A.37	Typescript journal 14 July 1932 - 10 July 1933 paginated 1 - 312. Some marginal notes and underscoring and loose page of notes between pages 199 and 200. Pages 271 - 275 are mispaginated 171 - 175. 10 folders.
A.38	List of birds, sketchmaps, drawings, ms notes.
A.39	Typescript copies of cables and radio messages exchanged.
A.40	Typescript copies of letters from Tinbergen dated Kûngmiut 20 April and Tasiussaq, 20 July 1933. Paginated 1 - 32. Some marginal notes and drawings.
A.40A	Ms journal 8 August - 23 September 1932.
A.41	Scrapbook used for press-cuttings of Dutch International Polar Year expedition to Greenland.
A.42	Two letters from Tinbergen to his parents, Altenberg, 18 and 29 March 1937; undated letter probably from the same period.
	Tinbergen spent the spring of 1937 working with Konrad Lorenz at the Lorenz family home, Altenberg near Vienna.

A.43 Three letters from Tinbergen to his parents written in the hostage camp where he was interned for a time during the Second World War. The first two are undated but attached to envelopes postmarked 11 and 23 September 1942 respectively, the third is dated 27 September 1942.

Letter from E A Tinbergen to Tinbergen's parents. Undated but from the time of Tinbergen's internment.

- A.44 Honorary membership etc of societies, various dates 1951-59.
- A.45 'Report on the activities of N Tinbergen as[Oxford]
  University Lecturer in Animal Behaviour from 1 October
  1954 till Christmas 1958'.

Note on activities March 1967.

A.46 Offers of posts 1958-71:

Emory University, Georgia 1958.

University of Miami, Florida 1963.

Center for Advanced Study in the Behavioral Sciences, Stanford, California 1968.

University of British Columbia 1971.

- A.47 Honorary membership etc of societies, various dates 1960-69; list of societies.
- A.48 Letter from Jaap Tinbergen (son) commenting on draft of Tinbergen's Inaugural Lecture at Oxford, 6 March [1968]; letters arising from lecture.

Tinbergen was appointed to a Chair in Animal Behaviour in 1966.

- A.49 Award of Godwin-Salvin medal, British Ornithological Union, 1969.
- A.50 Invitations to serve on committees, act in advisory capacities, various dates 1969-78.
- A.51 Membership of societies etc various dates 1970-87.
- A.52 A.67 Nobel Prize 1973.
- A.52 Letter of congratulation from Dean of the Medical Faculty, Karolinska Institutet; printed reply to letters of congratulation; press-cuttings. 1973.
- A.53 Correspondence and papers <u>re</u> Tinbergen's use of Nobel Prize money to support research by others, 1973-74, 1988.
- A.54 A.63 ' "Alexander Technique" Correspondence incl. New Scientist (after Nobel Speech) '. Contents of a folder so inscribed divided into ten for ease of reference.

In his Nobel Lecture of 10 December 1973 Tinbergen incorporated 'an emphatic note on the Alexander principle' which aroused a great deal of interest especially after the lecture's publication in <a href="Science">Science</a> 5 July 1974. An article by R Lewin on Tinbergen's advocacy of the Alexander Technique appeared in the <a href="New Scientist">New Scientist</a> 31 October 1974. See also C.100.

A.54	1973 Oct-Dec	A.59	1974 Sept,Oct
A.55	1974 Jan	A.60	1974 Nov, Dec, nd
A.56	1974 July (1)	A.61	1975 Jan-May
A.57	1974 July (2)	A.62	1977
A.58	1974 Aug	A.63	1978-81, nd

- 'Ethology, psychiatry and psychosomatic medicine. A review with particular regard to basic research by the 1973 Nobel Prize laureates: Karl von Frisch, Konrad Lorenz and Nikolaas Tinbergen' by B Cronholm, Reports from the Laboratory for Clinical Stress Research, Karolinska sjukhuset, Stockholm, September 1974.
- A.65 Appeal of Nobel Prize winners <u>re</u> world hunger and underdevelopment 1981.

Material includes personal statement by Tinbergen.

- A.66 Invitation from the French President F Mitterand to a meeting of Nobel prizewinners to consider problems of underdevelopment, unemployment, etc., 15 July 1987.
- A.67 Letter to Tinbergen on behalf of artist Giovannella who 'for the last few years has been painting the portraits of Nobel Laureates', 26 December 1987.

Exhibition catalogue 'Portraits of Nobel Laureates', California Museum of Science and Industry, 16 October 1987 - 4 January 1988.

A.68 Miscellaneous requests for Tinbergen's opinions and support 1978-79 and nd.

Includes 'Declaration Ecoropa'. 6pp typescript draft on need for a different European identity, an ecological democracy. [?1979]. With ms additions and corrections by Tinbergen.

- A.69 Distinguished Scientific Contribution Award of the American Psychological Association 1987.
- A.70 Social invitations 1968, 1972.

#### Drawings

A.71, A.72 Drawings of fellow hostages interned by the Nazis during the Second World War. The subjects are usually identified and the drawings dated and signed by Tinbergen. 2 folders.

Tinbergen was taught to draw portraits in pencil by a fellow hostage, the portrait painter Karel von Veen. See 'Watching and Wondering' in Dewsbury, D A (ed.) Leaders in the Study of Animal Behavior: autobiographical perspectives, p.451 (A.11).

A.73 Card signed by Tinbergen and his fellow hostages, 8 February 1944.

Hand-drawn menu 'ter gelegenheid van de 27ste verjaardag van Nico Tinbergen' signed by Tinbergen and his fellow hostages, 15 April 1944.

As Tinbergen was born in 1907 he was therefore 37 in 1944.

- A.74 Drawings by J J Ter Pelkwijk, a student of Tinbergen's who was killed during the Second World War. The drawings are accompanied by a note by E A Tinbergen which identifies the artist.
- A.75 A.78 Dutch ms text and drawings for Tinbergen's children's story about Kliew, the seagull. The story was published in New York in 1947 as <u>Kleew</u> in the Oxford Books for Boys and Girls series and in the Netherlands in 1948 as <u>Kliew</u>. 4 folders.
- A.79 Dustcover for New York edition of Kleew. Tinbergen explained how the story came to be written: 'While in the hostage camp for two years, I was allowed to write a letter to my family each week. One page in each letter I made into a picture story for my children, in order to keep up some sort of communication with them. In this way Kleew was made'.

A.80	Postcard used for drawing of the Hulshorst camp 1949 with signatures on verso. Hulshorst had been the location for the fieldwork of Tinbergen and his students for many years and 1949 was the year he moved to Oxford.	
A.81, A.82	Drawings for Tinbergen's children's story The tale of John Stickle published by Methuen 1954. 2 folders.	
A.83 - A.85	Stickleback drawings. 3 folders.	

Miscellaneous figures. 3 folders.

### Photographs

A.86 - A.88

- A.89 'Konrad Lorenz with his goslings, Altenberg, Austria, summer 1937'.
- A.90 Symposium on 'The creative process in science and medicine' organised by Boehringer Ingelheim at Schloss Kronberg, Taunus, 16 17 May 1974. Photograph album.

Participants included Tinbergen, Sir Hans Krebs, Bryan Magee, Desmond Morris and Anthony Storr. See also C.97, C.98.

A.91 'Tinbergen Legacy' meeting, Oxford, 20 March 1990. Group photograph; list of participants.

SECTION B	RESEARCH	B.1 - B.39

B. 1 - B.19	Notes and notebooks
в.20 - в.38	Research folders
в.39	Annotated publication

## Notes and notebooks

- B.1 Notebook used for field notes, 27 September 1928 11 April 1930.
- B.2 Notebook used for field notes, 10 April 2 May 1930.
- B.3 Notebook used for field notes, 11 May 22 July 1930, 18 January - 23 June 1931. Enclosures include 1931 membership card with photograph of Tinbergen.
- B.4 Notebook used for field notes, 6 July 19 December 1931. Enclosures include silhouettes of birds.
- B.5 Notebook used for field notes, 23 December 1931 19 June 1932, 6 October 1933 1 July 1934.
- B.6 Notebook used for field notes. 3 and 16 March 1935, 12 February 1937 and 'Reis Amerika [13-26 July] 1938'. At the back are notes including bibliographical references 1936 and 1937 'Non-ornithological Journals (E Mayr)'.
- B.7 Notebook used at the front for field notes for July of unidentified year, 2pp only and at the back for accounts for ?fieldwork July and August of unidentified year.

Notebook used for notes on the literature, latest B.8 bibliographical reference 1929. Notebook used for notes on the literature, latest B.9 bibliographical reference 1931. Notebooks used for records of L H Grutterink's research B.10, B.11 on sticklebacks, Leiden, April-June [?1938 or 1939]. See also B.25, B.26. Pages torn from notebooks used for field notes on the B.12 wasp Philanthus and the hobby (falcon) at Hulshorst in July and August of unidentified year. Found in Tinbergen's tin box. Pages torn from notebooks used for field notes on the B.13 herring gull at Kelderspanberg, April - July 1935. Found in Tinbergen's tin box labelled 'Zilvermeeuw 1935'. Pages torn from notebooks, notebook used for field notes B.14 on the herring gull at Kelderspanberg, May - July 1936. Found in Tinbergen's tin box labelled 'Zilvermeeuw 1936 Booy en Tinbergen'. B.15 Pages torn from notebooks and three notebooks used for field notes at Altenberg, Austria, the family home of Konrad Lorenz, March - June 1937; two cardboard cutouts used by Tinbergen in experimental work. Found in Tinbergen's tin box. B.16 Pages torn from notebooks and eight notebooks used for field notes, Scoulton, Farnes, Ravenglass, Walney, 1952-72. Found in Tinbergen's tin box. B.17 Pages torn from notebooks used for field notes, various dates 1934-36. Found in Tinbergen's envelope inscribed 'Visdieven'.

- B.18 Pages torn from notebooks used for field notes,
  Scolt Head, April July 1951. Found in Tinbergen's
  envelope inscribed 'Notes Scolt Head 1951' and
  'Blackheaded gulls'.
- B.19 Pages torn from notebook used for field notes, Farnes, 23 April - 14 May 1955.

#### Research folders

- B.20-B.24 'Voortplanting Driedoornstekelbaars'. Contents of folder so inscribed: notes, experimental data, diagrams etc re stickleback research, various dates 1936-59.
- B.20 1936, 1938.
- B.21 1939, 1940.
- B.22 1946, 1947.
- B.23 1949, 1959.
- B.24 Nd.
- B.25 <u>'Stekelbaars</u> Loes Grutterink'. Contents of folder so inscribed: notes, data <u>re</u> stickleback research 1938-39. See also B.10, B.11.
- в. 25 1938.
- B.26 1939 and nd.

B.27,B.28	'Publicatie: voortplantings ethologie stekelbaars'. Contents of folder so inscribed: notes, drafts, data etc. 1939-42.
в.27	Miscellaneous notes, bibliographical references, results. Some items dated 1939.
B.28	Contents of envelope inscribed 'Verslagen Stekelsbaarsproevel' zeewater-zoetwater 2° laterale schilden 3° schieten Ingvar Kristensen'. Items dated 1941 and 1942.
в.29-в.35	'Sci. notes, plans etc'. Contents of a folder so inscribed: correspondence, notes, drafts, printed matter etc. 1962-74.
	Relates to fieldwork in Cumbria at Ravenglass and Walney.
в.29	Research programmes, 1962.
в.30	Ravenglass permit, letter, 1966.
в.31	Correspondence; permit; 'Joost Tinbergen - a suggestion for a project infunctional anatomy'; story outlines etc for oyster catcher film. 1970-71.
в.32	Research programmes, correspondence etc., <u>re</u> Ravenglass reserve, 1972-73.
в.33	Correspondence, outlines for television film of Tinbergen's team at Ravenglass and Walney etc., 1974.
в.34	Miscellaneous undated items including correspondence, research notes and plan of Ravenglass reserve.
в.35	Printed matter re Ravenglass and Walney reserves.

- B.36 'Sheep dogs'. Contents of folder so inscribed: correspondence and research reports 1974, 1975 and nd.
- B.37 Notes on the literature 1950s.
- B.38 Miscellaneous notes and drafts.

## Annotated publication

B.39 <u>Human Aggression</u> by Anthony Storr (Allen Lane 1968), heavily annotated by Tinbergen.

SECTION C

LECTURES, PUBLICATIONS AND BROADCASTS C.1 - C.248

C. 1 - C.109 Lectures

C.110 - C.234 Publications

C.235 - C.248 Broadcasts

#### LECTURES

There are records of both Tinbergen's university teaching and his invitation and public lectures. Almost all the university teaching material relates to Tinbergen's career at Oxford 1949-74, although there are a few duplicated items relating to earlier ethology practical work in the Leiden Zoological Laboratory. The Oxford material documents the animal behaviour courses he taught to zoology and psychology students, and, in a separate sequence, his contributions to the new Honour School of Human Sciences which admitted its first students in October 1970.

There is a chronological sequence of Tinbergen's invitation and public lectures 1955-79, but this is by no means comprehensive even for the period covered and there are few fully prepared texts. The sequence can, however, be supplemented by a little material relating to Tinbergen's Oxford Inaugural Lecture March 1968 (A.48) and German texts of a number of lectures prepared for publication in the 1970s (C.152-C.160). There are, for example, the German texts of a lecture delivered by Tinbergen in Oxford 1946, and of his Royal Society Croonian Lecture 1972.

Tinbergen's lectures material is presented as follows:

C. 1 - C. 85 University teaching courses

C. 1 - C.52 Animal behaviour and zoology

C.53 - C.72 Human Sciences

C.73 - C.85 Miscellaneous

C.86 - C.109 Invitation and public lectures

#### University teaching courses

- C.1 C.52 Animal behaviour and zoology
- C.1 C.3 Third year ethology practical work Leiden Zoological Laboratory.
- C.1 'Inleiding tot de ethologie zoals die op het practicum bedreven wordt', latest bibliographical reference 1939.
- C.2 'Handleiding ethologie Actiesystemen 1.

  Geelgerande watertor Dytiscus marginalis L. imago'.
- C.3 'Handleiding ethologie Actiesystem 2. Driedoornige stekelbaars Gasterosteus aculeatus L.'
- C.4 C.6 'Behaviour practical'. Contents of folder so inscribed divided into three for ease of reference, various dates 1946-73.

A little early material on sticklebacks is in Dutch.

C.33

## Lectures, publications and broadcasts

C.7 - C.21 'Lectures advanced animal behaviour'. Contents of folder so inscribed divided into 15 for ease of reference, various dates, 1950-71. C.22, C.23 'Mollusca lectures'. Contents of folder so inscribed divided into two for ease of reference, various dates, 1955-62. C.24, C.25 'Ecology and distribution'. Contents of folder so inscribed divided into two for ease of reference, c.1957. Includes notes and drafts in Dutch. C. 26 'Behaviour lectures'. Contents of folder so inscribed, 1957-65. C.27 Psychology prelims, behaviour etc. Contents of Tinbergen's folder, various dates, 1957-1970. 'Prelim. Animal Behaviour for Psychologists'. C.28, C.29 Contents of Tinbergen's folder so inscribed divided into two for ease of reference, various dates, 1961-65. C.30 Revision of Final Honours Course, 1962. C.31 Courses for psychologists, various dates, 1963-71. C.32 'Advanced Class 1967'. Contents of folder so inscribed.

Birds in depth course, 1967, 1968.

- C.34 C.36 Film seminars and extramurals. Contents of Tinbergen's folder divided into three for ease of reference, c.1969-74.
- C.37 References for Tinbergen's and R Dawkin's animal behaviour lectures, Michaelmas term, 1970.
- C.38 Quinquennial Application. Supplementary statement on Animal Behaviour from a Joint Committee of the Department of Zoology and Experimental Psychology. Autumn 1970.

Relates to animal behaviour teaching and Tinbergen's retirement in 1974.

- C.39 'Animal behaviour. Summary lectures N.T. 1972 to zoologists, numbered 1-16'.
- C.46 'Literature notes for lectures 1972'. Contents of folder so inscribed.
- C.47 C.51 'References lectures 1972'. Contents of folder so inscribed divided into five for ease of reference.
- C.52 'Locomotory movements of the Earthworm'. Instructions for practical work, nd.

C.74

# Lectures, publications and broadcasts

C.53-C.72	Human Sciences.
c.53	'Honours course in human and social biology'. Papers for preliminary discussion meetings, 1964 and nd found in folder so inscribed. The original folder, which is illustrated with Tinbergen's drawings of rabbits, gull's head, caterpillar etc, is retained here.
C.54	1969.
C.55	1970-71.
C.56	'Human Sciences Prelim - Animal Behaviour'. Contents of folder so inscribed. 1972, 1973.
c.57-c.70	'Human Sciences 1973 8 lectures'. Contents of folder so inscribed divided into 14 for ease of reference.
C.71	Human Sciences: Animal Behaviour - Michaelmas Term 1973. References for lectures 1-6.
C.72	Nd. Includes material <u>re</u> Human Sciences Joint Consultative Committee.
C. /3-C.85	Miscellaneous.
C.73	'Special lectures' for non-biologists 1962. Brief correspondence only.
	Visiting lecturer 1962-63. Brief correspondence only.

'Tuition'. Contents of folder so inscribed. 1962,1963,1966.

- C.75 'Physiology of Animal Behaviour'. Outline of J W S Pringle's lectures, Tinbergen's ms notes. 1962. In original folder.
- C.76 Animal Behaviour Research Group. Contents of Tinbergen's folder 1962 or later. Includes posters illustrating Group's research work.
- C.77 Course in elementary German 1963.
- C.78 Animal Behaviour Research Group. May 1967.
- C.79 Notes for seminar on work on black-headed gull. Nd.
- C.80-C.85 Bibliographical references. 6 folders.

#### Invitation and public lectures

- C.86 'Displacement activities a re-examination of the problem', Association for the Study of Animal Behaviour symposium, Cambridge, July 1955.
  - 3pp typescript.
- C.87 'The comparative study of species specific behaviour'.
  - 24pp typescript of paper delivered at 'Princeton conference', undated but latest bibliographical reference 1956.
- C.88 'Aggression and fear in the normal sexual behaviour of some animals', Paris, February 1961.
  - llpp typescript. Folder also contains French language version.

- C.89 'Phylogenetic considerations'.
  - 33pp typescript with ms inscription 'Contribution to an inter-disciplinary conference on "sex and behaviour" held in Berkeley in 1961 and 1962. Written for psychologists, anthropologists and physiologists rather than for zoologists'.
- C.90 'New work in Ravenglass', Robert [Hinde]'s discussion group, Cambridge, 12 November 1962.

3pp typescript.

C.91 'After-dinner speech Ethological Conference 1963'.

2pp typescript.

C.92 'Behaviour as equipment for survival', John Ray Society, February 1967.

2pp typescript.

- C.93,C.94 'Um weltbezogene Verhaltensanalyse Tier und Mensch', celebration lecture on the occasion of '25 Jahre Experientia', Basel, 30 May 1969.
- C.93 Invitation, correspondence re arrangements.
- C.94 25pp photocopied typescript; 20pp typescript entitled 'Oekologische Verhaltensforschung'.
- C.95 'References Croonian'. Contents of a folder so inscribed.

  Tinbergen delivered the Croonian Lecture of the Royal Society in 1972. See also C.158.

C.96 'The social cat', lecture to visiting teachers, [Oxford]
July 1973.

lp typescript.

'Talk Waddenbijeenkomst 2 Maart 1974 Een bioloog over welvaart en welzijn'.

4pp typescript.

C.97, C.98 Symposium on 'The creative process in science and medicine', Kronberg, 16-17 May 1974. See also A.90. Tinbergen spoke on 'creative processes in science and medicine'.

Duplicated proceedings; published version of Tinbergen's address. 2 folders.

C.99 2nd cross-cultural Nobel Symposium on Man, Environment and Resources, Stockholm, 16-20 September 1974.

Brief correspondence <u>re</u> arrangements; 2 drafts of memorandum Tinbergen was asked to write with reference to the programme as a whole; draft of memorandum by Tinbergen referring to the session on 'The social and cultural environment'; ms notes on proceedings.

C.100 'Homo - proefkonijn der pheno-evolutie', Amsterdam, 12 October 1974.

Two 6pp typescript drafts; 2pp typescript abstract.

C.101 Lecture on communication in animal behaviour studies, York, 28 January 1975.

2pp typescript.

C.102 Conference paper 'The human condition - "deadly sins";
"progress", or signs of disadaptation?'. Cambridge,
June 1975.

Correspondence <u>re</u> arrangements; programme; 8pp typescript draft.

C.103 'Use and misuse in evolutionary perspective', Alexander Memorial Lecture, Royal Society of Medicine, November 1976.

5pp lecture notes and 14pp duplicated typescript; also Dutch language version of lecture.

C.104 'Man - Guinea Pig of Evolution', Madison, 25 April 1978.

3pp typescript 'final draft'.

'Seminar for Zoologists Madison: new field work', nd.
3pp typescript + lp ms.

- C.105
   'Child behaviour in ecological context', seminar
   for developmental group in psychology, 16 March 1979.
   4pp typescript.
- C.106 'Aggression and appeasement in animals', nd.
  2pp and 3pp typescripts; lp ms.

'Aggression in animals', nd.

2pp typescript.

C.107 'Biological aspects of predation', nd.

5pp typescript.

'The biological study of animal behaviour', nd. 6pp typescript.

C.108 'Ethology of scarecrows', nd.

lp typescript.

'Exeter - Life of the Lion', nd.

lp typescript.

'London Ethology Seminar', nd.

3pp typescript.

C.109 'Birkbeck (Film egg shell removal', nd.

2pp typescript.

'On living inside a bird watcher's hide (or:

"My hide is my castle")', nd. .

3pp typescript.

'Summary on social environment', nd.

6pp typescript.

#### **PUBLICATIONS**

There are drafts of a number of Tinbergen's scientific papers, illustrative material and a little correspondence with publishers and editors. The drafts are arranged in a chronological sequence 1937-80 (only 3 items before 1960) which is followed by a number of undated drafts and shorter publications such as press articles, reviews, obituaries. Of particular interest are the 1937 paper (C.110) which is drafted on the back of instruction sheets for ethology practical work at Leiden, a paper on stickleback research (C.111) which may not have been published, the preface and chapter plans for an unpublished book 'Bird City' (C.133) and draft chapters, correspondence etc., for an unpublished book on modern man's disadaptation with his environment 'Man - Guinea Pig of Evolution' (C.141-C.146).

The illustrative material, principally photographs by Tinbergen and others and drawings and figures, relates to the books Tinbergen published after the move from Leiden to Oxford in 1949. Experimental models used by Tinbergen in his research on the Grayling butterfly were found with the illustrative material for The study of instinct, 1951 (C.179).

A little correspondence with publishers and editors has been arranged in a chronological sequence 1959-86. It includes material relating to the Dutch magazine <u>De Levende Natuur</u> for which Tinbergen wrote over many decades (C.234).

Tinbergen's publications material is presented as follows:

C.110 - C.175 Drafts

C.176 - C.232 Illustrative material

C.233, C.234 Correspondence

### Drafts

C.110 'Das Verhaltenssystem von Gasterosteus aculeatus'.

Ms and typescript drafts on back of instruction sheets for ethology practical work. Nd but may relate to paper (with J J Ter Pelkwijk) 'Eine reizbiologische Analyse einiger Verhaltensweisen von Gasterosteus aculeatus L.', Z.f.Tierpsychol., 1 (1937)

- C.111 'The reproductive behaviour of the three-spined stickleback'.

  Ms and typescript drafts. Nd but reporting on work 1934-41, 1946-47.
- C.112 'Physiologische Instinktforschung', Experimentia', 4 (1948).

  16pp typescript + references and lp summary in English.
- C.113 'Van den Vos Reinaerde', <u>De Levende Natuur</u>, <u>63</u> (1960); 'Speurzand'and 'Eidoppen zijn gevaarlik', <u>De Levende Natuur</u>, <u>64</u> (1961).

Reprints only.

C.114 'Tracks in the sand'.

12pp typescript dated October 1961.

C.115 'Egg shell removal by black-headed gull, Larus ridibundus'.

2pp typescript 'abstract for "Ibis" of lecture N Tinbergen, Ann. Sci.Meeting B.O.U., 21st November 1961'.

'Ringing in sea-bird colonies' (with I J Patterson), Ringers' Bulletin, I (1961).

2pp typescript; copy of vol.1, no.10 of the Bulletin.

C.116 'Van Scholeksters en Mossellen' (with H Kruuk) De Levende Natuur, 65 (1962).

8pp typescript.

C.117 'Egg shell removal by the black-headed gull, (Larus ridibundus L.) II. The effects of experience on the response to colour.' (With H Kruuk & M Paillette), Bird Study, 9 (1962)

16pp typescript.

C.118 'How do black-headed gulls distinguish between eggs and egg-shells?' (with H Kruuk, M Paillette & R Stamm), British Birds, 55 (1962).

16pp typescript; correspondence; ms notes headed '1961 Hide observations about the distinction between egg and eggshell'.

C.119 Introduction to 1st Annual of the Cornell Laboratory of Ornithology, 1962.

Foreword to "Bird" by Lois and Louis Darling, 1962.

Foreword to book on fly behaviour by Dethier, 1962.

- C.120 'The evolution of animal communication a critical examination of methods', Symp. zool. Soc. Lond., 8 (1962).

  13pp typescript; proof; correspondence.
- C.121 'Foot-paddling in gulls', <u>British Birds</u>, <u>55</u> (1962).

  5pp typescript; correspondence; draft paper (7pp typescript) by M Rothschild 'Development of foot movements in black-headed gull (<u>Larus ridibundus</u> L.)'.
- C.122 Letter, notes etc., re planned article on the fox. 1962.
- C.123 Letter, drafts of note for <u>British Birds</u> 'Observation of the survival value of "playing dead".' 1962.
- C.124,C.125 'On aims and methods of ethology', Z. f. Tierpsychol., 20 (1963).
- C.124 51pp typescript + references and German summary.
- C.125 Proof copy.
- C.126 'An introduction to the behaviour and displays of British gulls', in D A Bannerman ed. <u>Birds of the British Isles</u>, XI (1963).

9pp typescript; figure; correspondence.

- C.127 Correspondence, summary etc., of paper on the oyster-catchers and their mussels submitted to British Birds, 1963.
- C.128 'Aggression and fear in the normal sexual behaviour of some animals', in I Rose ed., The pathology and treatment of sexual deviation (1964).

18pp duplicated typescript.

- C.129 'The evolution of signalling devices', in W Etkin ed.,
  Social behaviour and organisation among vertebrates (1964).

  37pp typescript etc.
- C.130 'Behavior and natural selection', in J A Moore ed.,

  Ideas in modern biology (1965). Originally appeared in

  Proc. 16th Zool. Congr.Wash. See C.156.

  3lpp typescript.
- C.131 'Zo pienter als Kraaien I'.

  13pp and 15pp typescript drafts, nd but report on work
  1952-65.
- C.132 'Zo pienter als Kraaien II'.

  15pp typescript; ms and typescript notes, etc.
- C.133 'Bird City' a case study of behavioural adaptedness'.

  Preface, chapter plans, nd, but drafted on back of pages of <u>De Levende Natuur</u>, 1966.
- C.134 'Adaptive features of the black-headed gull Larus ridibundus L' (with D W Snow), Proc. XIV Int. Orn.Congr. (1967).

  25pp typescript draft.
- C.135 'The future of the Walney Island Nature Reserve', South Walney Nature Reserve and Walney Bird Observatory Annual Report (1968).

  Copy of report; ms notes.

C.136
 'Clever gulls and dumb ethologists - or: The trackers
 tracked', Vogelwarte, 26 (1971).

Proof copy; ms note headed 'Gulls and crabs'.

C.137 'Visual cliff avoidance in chicks of the herring gull... and the British lesser black-backed gull...' by J M Tinbergen.

Ms and typescript notes and drafts including 8pp typescript with ms inscription '(lst draft NT)', nd latest bibliographical reference 1972.

- C.138 Foreword to book on the Manyara elephants by I and O Douglas-Hamilton, 1974.
- C.139 'In de Hof van Eden'.

llpp typescript, submitted to <u>De Levende Natuur</u>, December 1974.

C.140 'Onbehaaglijke co-existentie'.

8pp and 9pp typescript drafts, latest reference 1974.

C.141-C.146 'Man - Guinea Pig of Evolution'.

Over a period of years Tinbergen came to feel uneasy about the way in which Western society was developing. He believed that mankind, because of population growth, technological development, increased demand for natural resources, pollution of the environment and psychosocial pressures was facing a crisis. Tinbergen called this process 'disadaptation' - man becoming increasingly unfitted to his environment - and he felt it his task, as a biologist, to draw attention to 'the human predicament' and show how man might be re-adapted.

C.141-C.146 In 1974 Tinbergen began work on a book on this theme to be called 'Man - Guinea Pig of Evolution' and drafted four chapters. In June 1975, however, he wrote to the publisher George Allen & Unwin stating that this new work would have to be postponed so that he could devote the time to his and his wife's book on childhood autism. As an alternative he proposed to publish a 'bundle' of seven articles he had already written on the human predicament. This proposal was welcomed by George Allen & Unwin but in the event neither the entirely new book on the human predicament nor the collection of articles was published.

The material presented here is principally draft chapters for 'Man - Guinea Pig of Evolution', correspondence with George Allen & Unwin 1975 and a little introductory material for the collection of articles also entitled 'Man - Guinea Pig of Evolution'.

Tinbergen lectured on the human predicament on a number of occasions in the 1970s. See for example C.102 and C.104.

- C.141 Draft forewords, chapter plans etc.
- C.142 Chapter I The emergence of man.

15pp typescript 'copy - Jan 1975 - not polished'; shorter ms and typescript notes and drafts.

C.143 Chapter II Modern man.

16pp typescript, etc.

C.144 Chapter III Signs of disadaptation.

16pp ms draft; 8pp typescript draft, shorter ms and typescript notes and drafts.

C.145 Chapter IV What to do?

10pp ms draft.

- C.146 Correspondence with George Allen & Unwin, 1975; draft forewords etc for proposed collection of articles.

  See also C.147.
- C.147 'Time is running out'

Tinbergen was approached in June 1975 on behalf of a study group at the University of North Carolina at Chapel Hill to contribute to a proposed volume of opinions of Nobel laureates on the human predicament. Tinbergen sent a contribution but reserved the copyright as he intended to publish the statement as part of a 'bundle' of reprints of his other papers on this subject.

Correspondence 1975; 7pp typescript.

C.148 'Ethology in a changing world'.

29pp typescript. Nd but latest bibliographical reference 1975.

- C.149 Review of Animal Nature and Human Nature by W H Thorpe 1975.
- C.150 Foreword to Driver and Humphries' book on Protean behaviour; letter from Oxford University Press, 1977.
- C.151 Review of Manwatching by D Morris; letter, 1977.
- C.152-C.160 A selection of Tinbergen's scientific papers 1946-72, in German translations, prepared for volumes published by Zeitschrift für Tierpsychologie, 1977 or later.

The papers are presented in chronological order.

C.152	Letter from Zeitschrift für Tierpsychologie, 1977; introductions to 'Teil III Laborversuche' and 'Teil IV Allgemeine Schriften'.
C.153	'Über die Herkunft menschlicher Verhaltensweisen aus dem Tierreich', Oxford, 27 October 1946. 21pp typescript
C.154	'Stichlingsstacheln als Mittel der Feindabwehr', 1956. 37pp typescript.
C.155	'Vergleichende Verhaltensbeobachtungen an Möwen', 1959. 88pp typsecript.
C.156	'Natürliche Auslese und Verhalten', International Zoological Congress, Washington DC, July 1964. See C.130. 30pp typescript.
C.157	'Krähen Abstandhalten als Schultz vor Feinden', 1967.
C.158	'Funktionelle Ethologie und ihre Bedeutung für die Wissenschaften vom Menschen', The Croonian Lecture, Royal Society, 18 May 1972. See C.95.
C.159	'Vergleichend - ethologische Betrachtung des frühkindlichen Autismus', 1972.  32pp typescript.

- C.160 Unidentified.

  Typescript paginated 3-43.
- C.161 'Een Kraai is tenslotte toch maar en Kraai!'

  2pp typescript dated 8 March 1979.

'Happy moments with Bernard Kettlewell'
3pp typescript 'sent off 23 June 1979'.

- C.162 'Kokmeeuwen'.

  10pp typescript, covering letter 23 February 1980.
- C.163 'Vee in het vrije veld'.

  6pp typescript submitted to De Levende Natuur,
  25 April 1980.
- C.164 'Vossen en Konijnen'.

  5pp typescript; ms notes on foxes and rabbits at Ravenglass. 1980.
- C.165 'Our "eight deadly sins" a different perspective'.

  18pp typescript 'essay'; ms notes, etc., nd.
- C.166 'Samen uit, samen thuis'.

  4pp typescript, nd.

C.167 'Note about ethology section as note or as part of general introduction?'

lp typescript, nd.

'For the Robert Hinde "Festschrift".'

2pp and 1p ms, nd.

C.168 'The Ravenglass Peninsula'.

10pp photocopy, nd. Found in envelope inscribed 'Ravenglass guide, not used'.

C.169 Miscellaneous newspaper etc., articles by Tinbergen 1924-59, 1979 and nd.

C.170, C.171 Reviews.

C.170 1938-60.

C.171 1961-75.

C.172 Obituaries and tribute 1946, 1961.

C.173 'Editorial'.

6pp typescript <u>re</u> ethologists' contribution to the study of behaviour, nd.

C.174,C.175 'De verzoenende negaties. Een teleologische beschouwing van het lachen en schouderophalen' by W van Dries.

113pp typescript, nd. 2 folders.

### Illustrative material

- C.176-C.186 The study of instinct, Clarendon Press Oxford, 1951.
- C.176 List of illustrations.
- C.187-C.191 'Social behaviour in animals', Methuen, 1953.
- C.187 Lists of plates, captions for figures etc.
- C.188-C.191 Drawings, figures, photographs, etc. 4 folders.
- C.192-C.202 The herring gull's world, Collins, 1953.
- C.192 List of contents, preface, captions for photographs; brief correspondence from Collins 1952; foreword to new edition 'OKed 19 March '76'.
- C.193-C.196 Drawings and figures. 4 folders.
- C.197-C.202 Photographs. 6 folders.
- C.203-C.206 <u>Bird life</u>, Oxford University Press, 1954.

  Drawings, figures, photographs. 4 folders.

- C.207-C.227 Curious Naturalists, Country Life London, 1958.
- C.207 'Cur. Nat. text figs'. Contents of folder so inscribed.
- C.208-C.212 'Curious Naturalists'. Contents of folder so inscribed divided into five for ease of reference: numbered sequence (incomplete) of photographs used as illustrations.
- C.213-C.216 'Penguin Cur. Nat. Section 1'. Contents of folder so inscribed divided into four for ease of reference: photographs, drawings and figures.
- C.217 'Penguin Cur.Nat. Section 2'. Contents of folder so inscribed: photographs, drawings and figures.
- C.218-C.223 'Penguin Cur. Nat. Section 3'. Contents of folder so
  inscribed divided into six for ease of reference:
   photographs, drawings and figures.
- C.224-C.227 Miscellaneous photographs found with <u>Curious Naturalists</u> material. 4 folders.
- C.228 The Animal in its World, Allen & Unwin, 1972.

  Photographs, drawings and figures.

- C.229-C.232 Miscellaneous illustrative material.
- C.229 'Material to choose from plates': graylings, egg shell removal, philanthus etc.
- C.230 Wasps.
- C.231 Gulls.
- C.232 Sticklebacks, gulls etc.

### Correspondence

- C.233,C.234 Miscellaneous shorter publications correspondence 1959-86.
- C.233 1959-77.
- C.234 1980-86 and nd.

#### BROADCASTS

Although there is a little material relating to radio talks by Tinbergen, the bulk relates to television film documentaries: the 1969 Italia Prizewinner 'Signals for survival' and a 'Behaviour and Survival' series shown on BBC television 1973. The substantial documentation for the 'Behaviour and Survival' series reflects the complexities of television coproduction and multimedia publication.

C.235 Three talks for the BBC radio Third Programme on 'The "courtship" of animals', nd.

'The signalling function of courtship movements'.

9pp typescript.

'Fighting and threat as means of spacing out'.

8pp typescript.

'An explanatory theory of courtship'.

9pp typescript.

C.236 'On turning native', talk in the BBC radio 'Tuesday Talk' series, February 1961.

5pp typescript.

C.237-C.240 'Signals for survival', BBC television film documentary, 1969.

'Signals for survival' was introduced and photographed by Tinbergen. The film won the Italia Prize for Television 1969 (documentary category).

C.237 Script.

C.238-C.240 Correspondence <u>re</u> distribution of the film and publication of the text (with photographs and sketches) as a book 1969-71, 1973.

3 folders.

C.241-C.247 'Behaviour and Survival' film series 1973.

Tinbergen supervised a series of 13 films on animal behaviour which were coproduced by Windrose-Dumont-Time, Hamburg and the BBC. He made two of the films himself, one on tracks and the other on the oystercatcher. The film series was broadcast in 1973 on BBC2 under the general title 'Their World'.

Correspondence and papers 1969-73. 7 folders.

Include contracts, and postproduction scripts for the films on tracks and the oystercatcher. See also B.31 for material re oystercatcher film.

C.248 Miscellaneous shorter correspondence <u>re</u> broadcasts, 1967, 1980-81, 1987.

SECTION D AUTISM D.1 - D.196

Towards the end of Tinbergen's scientific career he became increasingly interested in human ethology. At this time he was approached by S J and C Hutt, then working at the Park Hospital for Children in Oxford, who asked for his help in their attempts to understand the serious mental disorder, early childhood autism. Tinbergen and his wife, who was very much an active partner and indeed initiator in this work, felt from their long experience of observing animal and human behaviour that autism 'was a deviation from normal behavior development that was quite clearly an exaggeration of normal, anxious, apprehensive "social avoidance behavior", which is such an easily recognizable (and very useful) component of normal childhood behavior'. Dewsbury, D A (ed) Leaders in the study of animal behavior p.457. On his retirement in 1974 the Tinbergens collaborated on a decade long study of autism which, by the application of ethological methods to child behaviour, led to a new theory of its nature and ontogeny and ultimately to a therapy which they championed through a wide range of lectures, publications and personal contacts.

The material, which is very extensive, is presented as follows:

D. 1 - D. 48	Correspondence
D. 49 - D.119	Lectures and Publications
D.120 - D.133	Background material
D.134 - D.196	Case histories

## CORRESPONDENCE

D.1 - D.31 General correspondence 1970-88.

D. 1	1970	D.17	1979 Jan-Mar
D. 2	1971	D.18	1979 April-Dec
D. 3	1972 Jan-Sept	D.19	1980
D. 4	1972 Oct-Dec	D.20	1981 Jan-June
D. 5	1973 Jan-Apr	D.21	1981 July, Aug
D. 6	1973 May-Dec	D.22	1981 Sept-Dec
D. 7	1974 Jan-June	D.23	1982 Jan-June
D. 8	1974 July, Aug	D.24	1982 July-Oct
D. 9	1974 Sept-Dec	D.25	1982 Nov, Dec
D.10	1975 Jan	D.26	1983 Jan-Mar
D.11	1975 Feb,Mar	D.27	1983 Sept,Oct
D.12	1975 May-Dec	D.28	1984
D.13	1976	D.29	1985
D.14	1977	D.30	1986
D.15	1978 Jan-June	D.31	1987-88
D.16	1978 July-Dec		

D. 32-D. 48	Correspondence with individuals
D.32,D.33	J A Allan
D. 32	1981-83
D.33	1986-88
D.34,D.35	P Elmhirst
D. 34	1980-82. Includes text of lecture by Elmhirst
D.35	Chapter outlines for book by Elmhirst; drafts for chapters 1 and 2, etc.
D.36,D.37	B Hassenstein
D.36	1976-77, 1980
D. 37	1981-83, 1987
D. 38-D. 42	J Prekop
D.38	1981
D.39	1982 Jan-June
D.40	1982 July-Dec
D.41	1983-85
D.42	Nd. Includes English translation of article by Prekop 'Holding therapy for autistic children. Theory and practice.'

D.43 1978, 1980

D.44 1981

D.45 1982

D.46 1983-88

D.47, D.48 M Zappella

D.47 1981-83

D.43-D.46 M G Welch

#### LECTURES AND PUBLICATIONS

1985-87 and nd.

D.48

D.49 'Early childhood autism - an ethological approach' (with E A Tinbergen) in Advances in Ethology Suppl.10, 1-53 (1972).

Reviews; foreword to new edition July 1974; 'Addendum - some guidelines for parents, educators and therapists'.

D.50-D.54 'Mother-Child'. Contents of Tinbergen's folder so inscribed divided into five for ease of reference.

Ms notes, drafts, correspondence 1972-74 re proposed expanded version of 'Early childhood autism'.

- D.55 'Autism etc lecture notes'. Contents of folder so inscribed. Notes, drafts, correspondence etc., re lectures 1972,1973. 'Ethology and Stress Diseases', Science 185, 20-27 (1974). D.56 Photocopy of published text only. 'Autistic children - a reply to your request', Summer 1974. D.57 8pp duplicated typescript. D.58 'Motivated conflict and stereotypies in autistic children', nd. c.1974. 14pp photocopied typescript; ms and typescript notes found with it. D.59 'Early childhood autism - York', Jan 1975. 3pp typescript lecture notes. D.60 'Early childhood Autism - Leeds', 10 February 1975. 3pp typescript lecture notes, etc. 'The aetiology of childhood autism: a criticism of the D.61 Tinbergens' theory: a rejoinder' (with E A Tinbergen),
- 'Notes for Lindau lecture and later 1978'.

  4pp typescript lecture notes with ms additions and corrections + lp typescript introduction headed 'Early childhood autism new hope etc. Seminar Dept. Psychology Oxford. Oct.78'.

Psychological Medicine, 6, 545-549 (1976).

Typescript drafts; reprint.

- D.63 'Meer hoop voor autistische kinderen en hun ouders', Vereniging ter Bevordering van Ortho-ogogische Aktiviteiten, 4 November 1978.
  - 8pp typescript draft; also 4pp typescript notes with same title for 'Apeldoorn nov.78'.
- D.64 'An ethological approach to early childhood autism', February 1979.

  8pp typescript.
- D.65 International Ethological Conference, 9 September 1980.

  lp typescript abstract only.
  - 'Autism', London, 21 February 1981.
  - 4pp typescript lecture notes.
- D.66 'An effective therapy for childhood autism', Lindau, 1981.

  2pp typescript lecture notes; correspondence.
- D.66A 'Autisme moet de schoenmaker altijd bij zijn leest blijven?'

  6pp typescript article published in <u>De Telegraaf</u>, Amsterdam,
  August 1981; also correspondence, newspaper cuttings.
- D.67 'How can an autistic child be helped?', August 1981.
  3pp typescript.
- D.68 'Early childhood autism', Ethology Congress, September 1981.

  3pp typescript lecture notes; lp ms notes; letter reproposed interview for BBC radio.

D.69 3rd International Symposium on the Management of Stress, Tokyo, 15-18 November 1981.

Ms notes for 'Stress lecture'; abstract of paper; correspondence re arrangements, etc.

D.70 'A ten years' study of early childhood autism and a new, successful therapy'.

15pp typescript 'text of lecture that was planned for 14 April 1982 for the Sociedad Española de Psicologia in Santiago de Compostela, Spain but not delivered'.

D.71-D.107 Autistic children new hope for a cure (with E A Tinbergen),
George Allen & Unwin, London, 1983.

#### Drafts

- D.71-D.82 Typescript draft with ms additions and corrections.
- D.71 Title, dedication, contents, chapter 1 'Foreword', chapter 2 'Introduction'. First page of chapter 2 dated March 1980.
- D.72,D.73 Chapter 3 'Analysis of the autistic state (1)'. First page of chapter 3 dated March 1980. 2 folders.
- D.74, D.75 Chapter 4 'Analysis of the autistic state (2)'. 2 folders.
- D.76, D.77 Chapter 5 'What makes children autistic?'. 2 folders.
- D.78, D.79 Chapter 6 'To what extent can autistic children recover?' 2 folders.

D.80 Chapter 7 'Methodological comments'. First page of chapter 7 dated March 1980. D.81, D.82 Chapter 9 'Practical suggestions to parents and caregivers'. 2 folders. D.83 Additions to autism book November 1981, January 1982. D.84 'New Postscript'. Contents of folder so inscribed: material for new postscript and publicity leaflet; 14pp typescript 'Anleitung der Therapie durch das Festhalten Welch/Tinbergen' by J Prekop; correspondence 1983 with M G Welch. D.85 Typescript draft paginated 56-101, nd. Relates to chapter 4 'Analysis of the autistic condition - the children's behaviour.' D.86 50pp typescript draft 'V. What makes children autistic?' First page dated January 1979 (crossed out) and March 1979. 'Early infantile autism: a preliminary clinical report D.87 of a successful therapeutic approach', by Martha G Welch, 1978. Welch's paper formed the basis for Appendix I of the Tinbergens'book on autistic children.

See D.102 for draft of Appendix II by M Zappella.

## Correspondence

D.88 - D.94 Correspondence with George Allen & Unwin (Publishers) Ltd

D.88 - D.94	1978-85.			(Publishers) Ltd
	D.88	1978-80	D.92	1982 July-Dec
	D.89	1981 Jan-June	D.93	1983
	D.90	1981 July-Dec	D.94	1984-85
	D.91	1982 Jan-June		
D.95-D.99	Foreign	rights 1971, 1977-86.		
	D.95	1971,1977-78	D.98	1982
	D.96	1979	D.99	1983-86
	D.97	1980-81		
D.100	Permissi	ons 1979, 1981-83.		
D.101-D.103	Correspondence with collaborators and colleagues 1980-83.			
D.101	1980 Nov	,Dec.		
D.102		Includes English versio		

children in a community setting' by M Zappella (Appendix

II of the Tinbergen book).

D.103 1982.

### Miscellaneous

- D.104 'List of names for copies of book', etc.
- D.105 Reviews.
- D.106 Transcript of BBC Radio Four programme 'Medicine Now', broadcast 7 and 9 January 1986.

Includes discussion of the Tinbergens' views on autism in their book. Contributors include J Richer.

- D.107 Ms and typescript notes. Include note of March 1980
  'In case circumstances would prevent me from completing our book on autism'.
- D.108-D.113 Autism paperback.

After the publication of the 1983 book Tinbergen hoped to produce a practical guide for parents. It does not appear to have been finished and was not published.

D.108 'Autism paperback Foreword'. Contents of folder so inscribed.

6pp typescript.

D.109 'Autism paperback Plan + Ch.1' Contents of folder so inscribed.

15pp typescript; ms notes.

- D.110 'Autism paperback Ch II'. Contents of folder so inscribed. 8pp typescript. D.111 'Autism paperback Ch.3'. Contents of folder so inscribed. Ms notes only. D.112, D.113 Miscellaneous notes and drafts relating to a proposed guide for parents. 2 folders. D.114 'Foreword for Dr Martha Welch's book "Holding Time"' 1988. Ms drafts. D.115 'Social encounter in normal and autistic children - an ethological study' (with E A Tinbergen), nd. Referees' reports only. The article had been submitted
- D.116 'Early childhood autism and psychosocial stress', nd.
  28pp typescript.
- D.117 'How educable are autists?', nd.
  24pp typescript, etc.

to Science.

- D.118 Ms notes for autism talk, nd.
- D.119 Miscellaneous ms and typescript notes and drafts.

#### BACKGROUND MATERIAL

D.120, D.121	Papers re Family Tree pre-school assessment unit for autistic children 1975-77. 2 folders.
D.122	Papers <u>re</u> Manchester Trust and Centre for Educating Handicapped Children 1979-81.
D.123-D.125	Newspaper cuttings. 3 folders.
D.126-D.133	Miscellaneous printed and duplicated material.  Some items annotated by Tinbergen. 8 folders.

#### CASE HISTORIES

D.134-D.196 This material which is very extensive is subject to restriction. 63 folders. Unindexed.

SECTION E CORRESPONDENCE E.1 - E.52

E. 1 - E.28 GENERAL SCIENTIFIC CORRESPONDENCE

In alphabetical order with an indication of information of particular biographical, historical or scientific interest.

E.29 - E.43 SHORTER SCIENTIFIC CORRESPONDENCE

In chronological order.

E.44 - E.50 INVITATIONS

Invitations to attend conferences, visit colleagues etc., declined by Tinbergen.

E.51, E.52 REFERENCES AND RECOMMENDATIONS

## GENERAL SCIENTIFIC CORRESPONDENCE

E.1 Attenborough, D F	
Beach, F A	1981,1986,1988
Blumberg, B S	1978
To 2	1070 1001 02
E.2 Burkhardt, R	1979,1981-83
re history of ethology: Tinbergen's personal history, the concept of the innate releasing mechanism, the role of Konrad Lorenz.	
E.3 Butenandt, A	1981-82
E.4 Dawkins, R	1976
re Dawkins's book The Selfish Gene.	
E.5 Falkus, H E L	1976,1980
re use of Falkus's photographs to illustrate be on 'Nature Detection'.	OOK
E.6 Goodwin, D	1968
	1300
Aggression in animals and Man	
E.7 Hinde, R A	1981
Huxley, J S	1968,1975,1986
Includes obituary by Tinbergen 1975, 'not poli 1986 item from Lady Huxley.	shed'.

E.8	Koenig, O	1979,1988
E.9	Leakey, R Aggression in Man.	1982
	Levi, L	1974-77
E.10-E.16	Lorenz, K Z various dates	1961-88
E.10	1961. Letter to Lorenz 31 January beginning 'Ich sofort Deine Arbeit gelesen! Und zum ersten Mal unserem Leben sind wir wirklich verschiedener Mein The letter, chiefly in English, relates to Tinberg disagreement with Lorenz over 'innate' versus 'env ment-induced' behaviour.	in ung!' en's
E.11	1965, 1970, nd. Chiefly obituaries of Lorenz prefor <u>The Times</u> .	pared
E.12,E.13	'Innate Bases of Learning. Lecture by Konrad Lore Harvard 1 June 1967'. 114pp typescript. 2 folder	
E.14	1975-81. Includes correspondence <u>re</u> 'Konrad Lore Gesellschaft'.	nz
E.15	1983-88. Includes 1983 correspondence <u>re</u> nominate of Lorenz for the Tyler Prize for Ecology/Energy.	ion
E.16	Bound illustrated brochure of vitae of Lorenz and B Lotsch, Austria's nominees for the Tyler Prize.	
E.16A	Ms drafts 'Für Konrad Lorenz's Festschrift'.	
E.17	Mayr, E	1963,1982-88

E.18 Medawar, P B 1974,1980,1988 1979,1981 Morris, D Nelson, B 1987 E.19, E.20 Pioneer Health Centre 1977,1978 The Pioneer Health Centre, the Peckham Experiment, was established in the 1930s 'as a laboratory for the investigation of human health' based on the idea of 'human ethology'. The Centre closed in 1950 but in 1977 Tinbergen was invited to join a scientific advisory committee overseeing a new Centre to be opened in Fifeshire. E.19 Correspondence re Pioneer Health Centre. E.20 Background information. E.21, E.22 Popper, K R 1974 E.21 re Popper's 1973 Herbert Spencer Lecture 'The rationality of scientific revolutions'. E.22 Copy of Lecture. E.23 - E.26 Rose, J R 1975-86 E.23 Correspondence re Ravenglass Nature Reserve, Cumbria. E.24, E.25 Rose's Ravenglass Reserve News Letters April 1975 -August 1982. Not a complete sequence. E.26 Ms jottings; 5pp typescript draft (in Dutch) 'Border Collies' on use of collies as sheep-dogs

in Upper Teesdale.

E.27	Scott, P M	1986,1987
	Southwood, T R E	1980
	Storr, A	1968
E.28	Tinbergen, J various date	es 1973-88
	Jan Tinbergen was Tinbergen's elder brother and winner of the Nobel Prize for Economics 1969.	
	Verwey, J	1969

## SHORTER SCIENTIFIC CORRESPONDENCE

E.29	1947-67	E.37	1981
E.30	1966	E.38	1982
E.31	1968-70	E.39	1983
E.32	1971-74	E.40	1985-86
E.33	1975	E.41	1987
E.34	1977-78	E.42	1988
E.35	1979	E.43	Nd
E.36	1980		

## INVITATIONS

E.44	1962-65	E.48	1970
E.45	1966-67	E.49	1971
E.46	1968	E.50	1972-75,1982
E.47	1969		

## REFERENCES AND RECOMMENDATIONS

E.51 1965-77 E.52 1977-80

#### INDEX OF CORRESPONDENTS

ADVISORY CENTRE FOR EDUCATION	A.53
AFMAN, G J	E.38
AIGOUY, Jean	E.33
ALDIS, Owen	D.5
ALLAN, John A	D.32,D.33
GEORGE ALLEN & UNWIN LIMITED	C.146,D.88-D.94,D.100
KENNETH ALLSOP MEMORIAL TRUST	E.32
AMERICAN ACADEMY OF ARTS AND SCIENCES	A.47
AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE	E.46
AMERICAN MUSEUM OF NATURAL HISTORY	A.44,A.47,A.51
AMERICAN ORNITHOLOGISTS' UNION	A.47
AMERICAN PSYCHOLOGICAL ASSOCIATION	A.69
AMERICAN SOCIETY OF ZOOLOGY	A.47
AMNESTY INTERNATIONAL	A.68
ANNETT, Marian	E.32
ASCHOFF, Jurgen	E.41
ATTENBOROUGH, Sir David (Frederick)	E.1 See also C.243
AUBERT, Alain	E.29
BAERENDS, Gerard P	A.19,E.41
BAERENDS, Jos	A.19,E.41

BAHNEMANN, F	A.57,A.63
BAILEY, William T	D. 26
BAKER, John L	A.60
BAKKER, S P	C.234
BALK-SMIT DUIJZENTKUNST, Frida	E.38
BANNERMAN, David	A.49
BARLOW, Wilfred	A.54-A.57, A.59, A.60 A.62, A.63
BATESON, P P G	C.102
BATTINO, Rubin	A.56,A.57
BEACH, Frank Ambrose	E.1
BECK, Henry	E.34
BEEBE, William	E.29
BEINTEMA, J J	D.6,D.7,D.10,D.11
BELGISCHE RADIO EN TELEVISIE	в.33
BENTLEY, S	E.38
BERSON, Myer	E.38
BETTELHEIM, Bruno	D.4
BETTENHAUSSEN, P J W	E.39
BLOHM, Helen	D.21,D.22,D.25
BLUMBERG, Baruch Samuel	E.1
BLURTON-JONES, N	C.28,D.25

BONVENTRE, Peter F	A.56,A.58
BREGER, Louis	D.3
BRIDGEMAN, Bruce	D.3
BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE	A.51
BRITISH BIRDS	c.118,c.121,c.123,c.127
BRITISH BROADCASTING CORPORATION	C.238,C.240,C.242-C.244 C.248,D.30,E.36
BRITISH TRUST FOR ORNITHOLOGY	E.48
BROBECK, John R	E.29
BROUGHER, J W	A.58
BRUGGER, Alois	A.57
BUCHHOLTZ, Christiane	A.51
BÜHRMANN, M Vera	D.3,D.4
BURKHARDT, Richard	E.2
BUTENANDT, Adolf	A.47,E.3
BUXTON, John	A.49
BYLES, Marie Beuzeville	A.62
CAIN, Arthur James	E.30
CAMPBELL, Bernard	A.50
CAPLAN, C C	A.57

CAPLAN, Deborah	E.41
CARTER, J F	A.56
CHAPMAN, David T	A.60
CHAPPLE, Eliot D	E.31
CHAUVIN, R	C.233
CHESTER, Sir (Daniel) Norman	C.53
CLARKE, John	A.48
COLLINS PUBLISHERS	C.192
COLLIS, G M	D.3
COMMONER, Barry	E.31
COPELAND, James	D.5
CORSON, Samuel A	A.56,A.5
COUNCIL OF EUROPE	A.50
COYNE, John J	A.63
CRONHOLM, Borje	See D.10
CULLEN, J M	C.31
CURIO, E	A.51
DALRYMPLE, Glenn V	A.58
DANSK ORNITHOLOGISK FORENING	A.44

DARLINGTON, Cyril Dean	C.53 See also C.73
DAVIS, Donald R	A.60
DAWKINS, Richard	E.4
DAWSON, N	E.36
de GROOT, R	D.16
DEOM, J	C.61
DESMEDT, J E	E.29
DEUTSCHE AKADEMIE DER NATURFORSCHER LEOPOLDINA	A.44,A.47
DeVORE, Irve	E.32
DEWSBURY, Donald A	A.9
DOMAN, Glenn	D.17,D.21
DONNELLY, T Brooks	A.63
DRIVER, Peter M	E.51
EATON, Randall	D.19
THE ECOLOGIST	A.5
ECOLOGY PARTY	A.68
EIBL-EIBESFELDT, Irenaus	D.66,D.100,E.36,E.40
EISMA, M	E.31
ELLIOTT, Gerald	A.59

ELMHIRST, Philippa	D.34,D.35,D.101,D.102
ENCYCLOPEDIA HEBRAICA	A.3
ENNION, Eric	C.238,C.242
ETHOLOGISCHE GESELLSCHAFT	A.51
EXLINE, Ralph V	E.36
EXPERIENTIA	C.93
EYER, Joe	E.32
FALKLANDS PEACE ADVERTISEMENT FUND	E.38
FALKUS, Hugh Edward Lance	B.34,C.233,E.5 See also B.31,C.238, C.239
FERGUSON-LEES, I James	C.118,C.121,C.123, C.127,E.48
FESTETICS, Antal	E.14
FLYNN, John T	D.8
FONDATION FRANQUI	A.50
FONDATION ROYAUMONT	E.49
FONDER, A C	A.56,A.57
FORD, Edmund Brisco	See C.73
FOSS, Brian	D.50

FOWLES, John	E.32
FRANCK, Dieter	C.242-C.244
FUJII, Noriyuki	D.15,D.17
GALUSHA, Joe	A.53,B.32,B.33,E.34
GARLICK, David	A.63
GARRIGUES, Pierre	D.28
GELDER, M G	E.39
GLASER, Edward M	A.57
GOETHE, Friedrich	E.37
GOLDACRE, R J	E.36,E.37
GOLDSMITH, Edward	A.5
GOMBRICH, Lisbeth	D.89,D.96,D.97,D.99 D.103,E.29
GOODWIN, Derek	E.6
GRAHAM, P J	D.3
GREBEN, Stanley E	D.23
GRUEN, Arno	D.20
GUSTAFSSON, Bengt	See D.103

HAARTMAN, Lars V	E.36,E.38
HABAKKUK, Sir John (Hrothgar)	A.53
HAILMAN, Jack P	E.40
HALE, Nathan Cabot	A.60,A.61
HALLIDAY, Timothy R	E.40
HALPERIN, Israel	E.41
HANA, Kees	C.242
HARRISON, Geoffrey	See C.56
HART, Paul J B	E.52
HASSENSTEIN, Bernhard	D.7,D.36,D.37,E.38
HAVERSCHMIDT, F	A.19
HEDIGER, H	E.31,E.42
HEMMINGER, Hansjoerig	D.25,D.26
HINDE, Robert Aubrey	C.102,E.7
HOGERZEIL, J R	E.31
HOPF, Sigrid	D.29
HORROCKS, John E	C.233
HOUBEN, Aerdt	E.35
HOYT, Erich	D.24
HUBER, Franz	E.41

KAHAN, V L

### Index of correspondents

HUESSY, Hans R	D.8
HUMPHREY, Nicholas	E.37
HUTT, Corinne	D.2,D.9,D.11,D.18
HUTT, S John	D.1,D.100,D.102
HUXLEY, Sir Julian (Sorrell)	D.25,E.7
HUXLEY, Juliette, Lady	D.103,E.7
INGLIS, Brian	D.22
INSTITUTE FOR A FUTURE	E.40
INTERNATIONAL SOCIETY FOR RESEARCH ON AGGRESSION	A.51
INTER-UNIVERSITY COUNCIL FOR HIGHER EDUCATION OVERSEAS	A.50
ISAACS, Susanna	D.4,D.5
JACOBS, Milton A	A.56
JACQUES, Alain	A.60
JENKINS, Rachel	D.14
JESSEL, Camilla	D.30
JONES, Sir Brynmor	E.51
JONES, Frank Pierce	A.57-A.59

D.3

KAMP, L N J	D.3,D.4,D.6
KAPLAN, Ida R	A.59
KAY, James L	E.37
KETTLEWELL, Henry Bernard Davis	E.29
KNEIST, Günther	D.4
KOENIG, Otto	E.8,E.52
KONINKLIJKE NEDERLANDSE AKADEMIE VAN WETENSCHAPPEN	A.47
KONNER, Melvin	E.33
KORENTAYER, Kolman	A.60
KORTENDEVER, E J	E.36
KOVACS, Forest M	E.31
KRAMER, Douglas A	D.18,D.20,D.21,E.42
KREEGER,	E.34
KRUUK, Hans	A.53,C.118
KUMMER, Hans	D.28
LACK, David Lambert	A.48
LADD, Jean	A.62
LAKE DISTRICT NATURALISTS' TRUST	A.47,B.31,B.33
LEAKEY, Richard	E.9
LEGER, G P M	A.58

LEHRMAN, Daniel S	E.29,E.44-E.46
LELIJVELD, H	E.39
DE LEVENDE NATUUR	C.234
LEVI, Lennart	E.9,E.51
LEVINE, Murray	D.8
LEVINE, Peter	E.34
LIS, Adam W	D.12
LOEBENBERG, David	A.58
LOENEN, J H M M	A.58,E.32
LOLAS, Fernando	D.21,D.24,D.103
LORENZ, Konrad Zacharias	E.10-E.16
LUEKEN, B	A.47
LUTZ, J	D.3,D.4
McANUFF, John	A.53,B.36
McCREADY, Geraldine	D.17
MACDONALD, Patrick J	A.60
McFARLAND, David	C.233
McGRAW-HILL BOOK COMPANY	C.238-C.240, C.243, C.244
MACMILLAN PUBLISHING CO., INC.	A.8
McPHERSON, W	A.23

MAISEL, Edward	A.55
MAKKINK, G Frans	E.31
MANLEY, Gilbert H	C.7
MANNING, Aubrey	See C.248, D.68
MANNING, Margaret	A.53
MARCUS, Richard E	E.38
MARTIN, Ronald	D.3
MASON, Gwendoline B	D.5
MAXSON, Stephen C	E.32
MAX-PLANCK-GESELLSCHAFT	A.47
MAYER, Jane R	A.60
MAYR, Ernst	D.4,E.17
MEARS, Donald B	A.57,A.62
MEDAWAR, Sir Peter (Brian)	E.18
MEYER-HOLZAPREL, Monika	E.41
MEYERS, C J	A.3
MICHAEL, Richard P	C.73
MIKKELSEN, E	A.22
MISLIN, H	C.93
MITCHELL, C R	E.31
MITTELSTAEDT, H	E.41
MITTERAND, François	A.66

MOLÍK, Petr	E.38
MONOD, Jacques	E.49
MOORE, Rita J	A.56
MORRIS, Desmond	D.103,E.18,E.51
MORRIS, Sean R	E.32,E.37
MOTHES, Kurt	A.44,A.47
MOYNAHAN, E J	D.9
MULDER, Jaap L	E.34
MULLER, Hubert	D.22
NEDERLANDSE OMROEP STICHTING	C.248
NEDERL. ORNITHOLOGISCHE VEREENIGING	A.44
NELSON, Bryan	E.18
NEUBERGER, Albert	A.50
NEWBOLD, Heather	A.60
NEWSOM, John	D.5
NEY, Philip G	D.6
NICHOLS, David	в.32
NILSSON, Sam	E.33
NUFFIELD FOUNDATION	A.53,B.36

ODBERG, Frank Olof	D.22
ODENT, Michel	D.24
OFFERHAUS, M J	A.58
OLIVER & BOYD LIMITED	C.126
OXFORD SCIENTIFIC FILMS LIMITED	E.32,E.37
OXFORD UNIVERSITY PRESS	c.150,c.239
PALUMBO, Anthony J	A.62
PAUL PAREY VERLAGSBUCHHANDLUNG	D.94,D.95-D.99,D.100
PARISH, Roger	A.59
PARK, Thomas	E.41
PARSONS, Christopher	C.238,C.242-C.244
PARSONS, Christopher PATTEN, John Haggitt Charles	C.238,C.242-C.244 E.38
PATTEN, John Haggitt Charles	E.38
PATTEN, John Haggitt Charles PAULING, Linus Carl	E.38 D.66
PATTEN, John Haggitt Charles  PAULING, Linus Carl  PEARSE, Innes H	E.38 D.66 E.19
PATTEN, John Haggitt Charles  PAULING, Linus Carl  PEARSE, Innes H  PENGUIN EDUCATION	E.38 D.66 E.19 D.54
PATTEN, John Haggitt Charles  PAULING, Linus Carl  PEARSE, Innes H  PENGUIN EDUCATION  PIAGET, Jean	E.38 D.66 E.19 D.54 C.233
PATTEN, John Haggitt Charles  PAULING, Linus Carl  PEARSE, Innes H  PENGUIN EDUCATION  PIAGET, Jean  PIERCE, Alexandra	E.38  D.66  E.19  D.54  C.233  A.59
PATTEN, John Haggitt Charles  PAULING, Linus Carl  PEARSE, Innes H  PENGUIN EDUCATION  PIAGET, Jean  PIERCE, Alexandra  PIONEER HEALTH CENTRE LIMITED	E.38  D.66  E.19  D.54  C.233  A.59  E.19,E.20

PORTIELJE, A F J	A.19
PREKOP, Jirina	D.38-D.42,D.103 See also D.84
PRIEST, H S	A.56
PRINGLE, John William Sutton	A.53,C.28,C.30,E.29,E.45
PUSEY, Harold K	See C.31
QUISPEL, A	E.32
RAACKE, I Dorothea	A.58
READ, Merrill S	A.58
REMY, R H	A.57
RENEN, Noam	A.60
REYNOLDS, Vernon	D.15
RICHER, John	D.3,D.5,D.6,D.7,D.10, D.19,D.21,D.25,D.31, D.102
RIMLAND, Bernard	D.8,D.9,D.18,D.26
ROBERTS, John Morris	E.40
ROBINSON, James P	A.58
ROBINSON, Michael Hill	E.51,E.52
ROEDER, Kenneth D	E.29
ROSE, Major J R ('Jimmy')	B.31,E.23-E.26

ROSE, Waltraut	E.39
ROSENBLATT, Jay S	E.35,E.36
ROTHSCHILD, the Hon. Miriam Louisa	C.121
ROYAL COMMISSION FOR THE EXHIBITION OF 1851	A.50
RUTTENBERG, Bertram A	D.14,D.15
RUTTER, Michael L	D.1
SACHS, Lisbeth J	D.7
SALOMON, Michel	A.5,E.36
SAMS, Mona J	D.10
SANUA, Victor D	D.15,D.18
SASAKI, Masami	D.14
SCHEINFELD, Dorothy	A.58
SCIENCE	D.11
SCIENTISTS FOR SOVIET REFUSENIKS	E.38
SCORER, R S	E.29
SCOTT, Sir Peter (Markham)	E.27
SEDGWICK, Rae	A.58
SELIGMAN, Martin E P	D.11,D.15
SELYE, Hans	D.69,E.32
SEVENSTER-BOL, Angela	D.102

SHACKLETON, Robert	A.53
SHAFFER, Lary C	A.53,B.36,E.35
SHERMAN, Elaine	A.58
SIPKES, C	E.42
SMITH, Cecilia	D.7,D.8
SMITH, Peter K	D.3
SOCIETY FOR THE STUDY OF EVOLUTION	A.47
SOUTHWOOD, Sir (Thomas) Richard (Edmund)	E.27
SPARKS, John	E.36,E.38
SPITZ, René A	D.3
STAMM, Roger Alfred	E.31
STENSRUD, Rockwell	E.36
STEVENSON, D Lang	E.19
STICHTING TOEGEPASTE ECOLOGIE	E.33-E.35
STORR, Anthony	D.8,D.24,E.27
STRANSKY, Judith	A.63
STROH, George	D.1,D.5,D.6
SUTOO, Den'etsu	E.39
SYKORA, C	C.234
	w-
TAGUCHI, Tsuneo	D.18,D.23,D.69, D.102,D.103

TALICE, Rodolfo V	E.37,E.38
TARNOW, David	C.248
TATUM, Edward L	C.147
ten HOUTEN, Hans	E.36
THAMES & HUDSON LTD	A.54
THOMAS, Harford	E.42
THORPE, William Homan	A.4
TILLEARD-COLE, Richard R	D.3
TINBERGEN, Jaap	A.48
TINBERGEN, Jan	E.28
TIZARD, Jack	D.12
TOYAMA, Philip M	D.69
TRIVERS, Robert	E.40
TRUEX, C Richard	A.56
TURNER, Edward	E.36
UITGEVERIJ PLOEGSMA	D.95,D.96
UTTENDÓRFER,	See A.19
UVNÄS, Börje	A.52

VAN BEUSEKOM, G	D.4
VAN DEN BRANDE, Lieve	D.23
VAN DER STEEN,	E.37
VAN DIEREN, Wouter	E.33-E.35
VAN DOBBEN, W H	E.40
VAN GEUNS, Robert E	A.61
VAN LOHUIZEN, T	A.20,A.21
VAN LOOKEREN CAMPAGNE, G J	D.3,D.11
VAN ROOM, Jos (see under BAERENDS)	
VERWEY, Jan	E.28
VICTOR, George	D.24
VOIGT, Jürgen	C.244,E.31
VOWLES, David M	C.31
WALDON, Geoffrey	D.16,D.20,D.21 See also D.122
WARSHAWSKY, J	A.56,A.57
WATSON, Beatrice	A.25
WATSON, Thomas	A.25
WEATHERALL, Sir David John	E.37
WELCH, Bruce L	E.31

WELCH, Martha G	D.43-D.46,D.84,D.102 See also D.87,D.114
WESTDEUTSCHER RUNDFUNK	C.248
WHELDON, Sir Huw (Pyrs)	C.240
WICKLER, Wolfgang	E.31,E.40
WIJSENBEEK, H	A.60
WILCOCK, Bruce	C.238,C.240
WILLIAMS, Tim	D. 22
WILSON, Ellery Lewis	A.62
WIND, J	D.6,D.7
WINDROSE-DUMONT-TIME	C.242-C.244
WING, Lorna	D.1
WITCHALLS, James R	E.19
WOHLFARTH, E P	E.38
WORLDWATCH INSTITUTE	A.51
YASUDA, Hajime	D.13,D.16
ZACK, Sheldon	A.58
ZAPPELLA, Michele	D.47,D.48,D.102
ZASLOW, Robert W	D.22,D.23
ZEEMAN, Erik Christopher	E.50
ZEITSCHRIFT FÜR TIERPSYCHOLOGIE	C.152