THE SCIENTIFIC REPORTS OF THE WHALES RESEARCH INSTITUTE, TOKYO, JAPAN

NUMBER 1, JUNE 1948

Akiya, S. and Tejima, S. Studies on Digestive Enzyme in Whale. 3-7

Akiya, S., Ishikawa, Y., Tejima, S. and Tanazawa, T. Studies on Tryptase from a Whale (Balaenoptera borealis L.) 8-10

Akiya, S., Tejima, S. and Ishikawa, Y. Studies on the Utilization of Whale Meat by the use of Pancreatic Tryptase of Whales. 11-14

Akiya, S. and Kobo, F. The Test Culture of Some Microorganisms with Whale Meat Peptone. 15-16 Nakai, T. Chemical Studies on the Freshness of Whale Meat. I. Evaluation of Freshness and Changes

in Quantity of Several Kinds of Nitrogen in Whale Meat Following Deterioration of Freshness. 17-26 Nakai, T. Chemical Studies on the Freshness of Whale Meat. II. On Comparison between Whale Meat

and Beef on Deteioration of Freshness and Autolysis. 27-30 Tawara T. On the Simultaneous Extraction of Vitamin A D and Vitamin B. Complex from the Liver of

Tawara, T. On the Simultaneous Extraction of Vitamin A-D and Vitamin B₂ Complex from the Liver of a Fin Whale (Nagasu-Kujira, Balaenoptera physalus L.). 31-37

Tawara, T. Studies on Whale Blood. I. On the Separation of Histidine from Whale Blood. 38-40 Nakai, J. and Shida, T. Sinus-hairs of the Sei-Whale (*Balaenoptera-borealis*). 41-47

NUMBER 2, DECEMBER 1948

Ogawa, T. and Arifuku, S. On the Acoustic System in the Cetacean Brains. 1-20 Yamada, M. Auditory Organ of the Whalebone Whales. (Preliminary Report). 21-30 Nakai, T. Chemical Studies on the Freshness of Whale Meat. III. Effect of Hydrogen-ion Concentration

on Decrease in Freshness and Titration Curve of Whale Meat with HCl and Na₂CO₃. 31–34 Ishikawa, S., Omote, Y. and Soma, Y. Analytical Distillation of Vitamin A in the Whale Liver Oil. 35–41 Ishikawa, S., Omote, Y. and Kanno, H. Molecular Distillation of Sperm Whale Blubber Oil. 42–45 Kaneko, A. Molecular Distillation of Fin Whale Liver Oil. 46–50

Akiya, S. and Takahashi, K. Determination of Tryptophane in Whale Meat. 51-54

Ishikawa, Y. and Tejima, S. Protein Digestive Power of Sperm Whale Pancreatic Enzyme. 55-60

Tsukamoto, S. Experiment on Digestion of Whale Meat by Koji-mould. 61-66

NUMBER 3, FEBRUARY 1950

Ogawa, T. and Shida, T. On the Sensory Tubercles of Lips and of Oral Cavity in the Sei and the Fin Whales. 1-16

Ohe, T. Distribution of the Red Marrow in Bones of the Fin Whale. 17-22

- Hosokawa H. On the Cetacean Larynx, with Special Remarks on the Laryngeal Sack of the Sei Whale and the Aryteno-Epiglottideal Tube of the Sperm Whale. 23-62
- Akiba, T., Tsuchiya, T., Umehara, M. and Natsume, Y. Bacteriological Studies on Freshness of Whale Meat. (Report No. 1). 63-70

Ishikawa, Y. Protein Digestive Power of Sperm Whale Pancreatic Enzyme. II. 71-78

Mori, T. and Saiki, M. Properties of Fats and Oils Contained in Various Parts of a Sperm Whale Body. 79-84

Tawara, T. and Fukazawa, R. Studies on Kitol. I. Preparation of Kitol from Whale Liver Oil. 85-88

Tawara, T. and Fukazawa, R. Studies on Kitol. II. Influence of Kitol Fraction on the Determination of the International Unit of Vitamin A. 89-91

Tawara, T. and Fukazawa, R. Studies on Kitol. III. The effect of Sunlight, Air and Heat on the Vitamin A and Kitol Fractions. 92-95 Tawara, T. On the Respiratory Pigments of Whale (Studies on Whale Blood II.) 96-101

Yoshida, M. Research on Methionine in Whale. 102-105

Mizue, K. Factory Ship Whaling Around Bonin Islands in 1948. 106-118

Mizue, K. and Jimbo, H. Statistic Study of Foetuses of Whales. 119-131

Nishiwaki, M. and Hayashi, K. Biological Survey of Fin and Blue Whales Taken in the Antarctic Season 1947-48 by the Japanese Fleet. 132-190

NUMBER 4, AUGUST 1950

- Omura, H. On the Body Weight of Sperm and Sei Whales located in the Adjacent Waters of Japan. 1-13
- Omura, H. Diatom Infection on Blue and Fin Whales in the Antarctic Whaling Area V (the Ross Sea Area). 14-26
- Omura, H. Whales in the Adjacent Waters of Japan. 27-113
- Nishiwaki, M. Determination of the Age of Antarctic Blue and Fin Whales by the Colour Changes in Crystalline Lens. 115-161
- Nishiwaki, M. Age Characteristics in Baleen Plates. 162-183
- Nishiwaki, M. On the Body Weight of Whales. 184-209

NUMBER 5, JUNE 1951

- Akiba, T., Umehara, M. and Natsume, Y. Bacteriological Studies on Freshness of Whale Meat. (Report No. II). 1-4
- Hosokawa, H. On the Pelvic Cartilages of the Balaenoptera-Foetuses, with Remarks on the Specifical and Sexual Difference. 5-15
- Ohe, T. Iconography on the Abdominal Cavity and Viscera of the Balaenoptera, with Special Remarks upon the Peritoneal Coverings. 17-39
- Akiya, S. and Hoshino, O. Isolation of Histidine from Whale Blood Using 3, 4-Dichlorobenzene Sulfonic Acid. 41-47
- Tawara, T. and Fukazawa, R. Studies on Kitol. IV. Purification of Kitol by Chromatographie. 49-51

Ishikawa, S., Omote, Y. and Okuda, H. Substances Related to Vitamin A in the Whale Liver Oil. 53-59

Ishikawa, S., Omote, Y., Kijima, M. and Okuda, H. Thermal Decomposition of Kitol. 61-69

Mizue, K. Grey Whales in the East Sea Area of Korea. 71-79

Mizue, K. Food of Whales (In the Adjacent Waters of Japan). 81-90

Nishiwaki, M. and Ohe T. Biological Investigation on Blue Whales (Balaenoptera musculus) and Fin Whales (Balaenoptera physalus) Caught by the Japanese Antarctic Whaling Fleets. 91-167

NUMBER 6, DECEMBER 1951

- Hosokawa, H. On the Extrinsic Eye Muscles of the Whale, with Special Remarks upon the Innervation and Function of the Musculus Retractor Bulbi. 1-33
- Murata, T. Histological Studies on the Respiratory Portions of the Lungs of Cetacea. 35-47

Kojima, T. On the Brain of the Sperm Whale (Physeter catodon L.) 49-72

- Mizue, K. and Murata, T. Biological Investigation on the Whales Caught by the Japanese Antarctic Whaling Fleets Season 1949-50. 73-131
- Nishiwaki, M. On the Periodic Mark on the Baleen Plates as the Sign of Annual Growth. 133-152
- Nishiwaki, M. and Hibiya, T. On the Sexual Maturity of the Sperm Whales (*Physeter catodon*) found in the Adjacent Waters of Japan (I). 153-165
- Nakai, T. Chemical Studies on Freshness of Whale Meat. IV. Some informations of Achromobacter ubiquitum isolated from Whale Carcass. 167-176
- Nakai, T. and Ono, H. The Effects of Electric Shock and Fatigue on Post-mortem Changes in Muscle. 177-185

- Omote, Y. Complete Recovery of Vitamin A from Molecular Distillation Residue of Whale-liver Oil. 187-191
- Omote, Y. Chemical Structure of Kitol (I). Double Bonds and Hydroxyl Groups. 193-198
- Hirata, M. Experimental Investigation on Flattened Head Harpoon an Attempt for Restraining Ricochet. 199-207

NUMBER 7, JULY 1952

- Ogawa, T. On the Cardiac Nerves of Some Cetacea, with Special Reference to those of *Berardius bairdii* Steineger. 1-22
- Akiya, S., Hoshino, O. and Motohashi, N. On an Attempt to Preserve Whale Meat Freshness with 5-Nitrofurfuriden Aminoguanidine from Decay. 23-30
- Akiya, S. and Sawamura, R. Colorimetric Determination of 5-Nitro-2 furfurdiene Aminoguanidine. 31-36
- Tomiyama, S. and Takao, M. Studies on Utilization of Higher Fatty Alcohol from Sperm Whale Oil. 37-46
- Omote, Y. A Rapid Method for the Separate Determination of Vitamin A and Kitol in the Whale-liver Oil. 47-50

Arai, Y. and Sakai, S. Whale Meat in Nutrition. 51-67

- Yamaguchi, K. and Fujino, K. On the Serological Constitution of Striped Dolphin (Prodelphinus caeruleoalbus (Meyen)) (I.) 69-77
- Nishimoto, S., Tozawa, M. and Kawakami, T. Food of Sei Whales (Balaenoptera borealis) Caught in the Bonin Island Waters. 79–85
- Nishiwaki, M. On the Age-Determination of Mystacoceti, Chiefly Blue and Fin Whales. 87-119
- Nishiwaki, M. and Hibiya, T. On the Sexual Maturity of the Sperm Whales (*Physeter catodon*) Found in the Adjacent Waters of Japan (II). 121-124
- Ohno, M. and Fujino, K. Biological Investigation on the Whales Caught by the Japanese Antarctic Whaling Fleets, Season 1950/51. 125-188

NUMBER 8, JUNE 1953

Yamada, M. Contribution to the Anatomy of the Organ of Hearing of Whales. 1-79

Omura, H. Biological Study on Humpback Whales in the Antarctic Whaling Areas IV and V. 81-102

Fujino, K. On the Serological Constitution of the Sei-, Fin-, Blue- and Humpback-Whales (I). 103-125

Ogawa, T. On the Presence and Disappearance of the Hind Limb in the Cetacean Embryos. 127-132

- Nishiwaki, M. and Yagi, T. On the Age and the Growth of Teeth in a Dolphin, *Prodelphinus caeruleo-albus*). (I). 133-146
- Kakuwa, Z., Kawakami, T. and Iguchi, K. Biological Investigation on the Whales Caught by the Japanese Antarctic Whaling Fleets in the 1951-52 Season. 147-213
- Nishiwaki, M. Hermaphroditism in a Dolphin (Prodelphinus caeruleo-albus). 215-218

NUMBER 9, JUNE 1954

- Akiya, S., Hoshino, O. and Motohashi, N. Attempt to Preserve Freshness of Whale Meat with Germicides. II. 1-10
- Ogawa, T. On the Musculature of the Sinus Venosus and its Continuation with the So-called Conducting System of the Whale's Heart. 11-35
- Yamada, M. Some Remarks on the Pygmy Sperm Whale, Kogia. 37-58
- Yamada, M. An Account of a Rare Porpoise, Feresa Gray from Japan. 59-88
- Omura, H. and Fujino, K. Sei Whales in the Adjacent Waters of Japan. II. Further Studies on the External Characters. 89-103

Fujino, K. On the Scrological Constitution of the Sperm- and Baired Beaked-Whales (I) Blood Groups

of the Sperm- and Baired Beaked-Whales. 105-120

- Fujino, K. On the Body Proportions of the Fin Whales (Balaenoptera physalus (L) Caught in the Northern Pacific Ocean (I) (Preliminary Report). 121-163
- Nishiwaki, M., Hibiya, T. and Kimura, S. On the Sexual Maturity of the Sei Whale of the Bonin waters. 165-177
- Uda, M. Studies of the Relation between the Whaling Grounds and the Hydrographical Conditions (I). 179-187

NUMBER 10, JUNE 1955

Hosokawa, H. Cross-Section of a 12 mm. Dolphin Embryo. 1-68

Nemoto, T. White Scars on Whales (I) Lamprey Marks. 69-77

- Omura, H. and Nemoto, T. Sei Whales in the Adjacent Waters of Japan. III. Relation between Movement and Water Temperature of the Sea. 79-87
- Omura, H., Fujino, K. and Kimura, S. Beaked Whale Berardius bairdi of Japan, with Notes on Ziphius cavirostris. 89–132

Fujino, K. On the Body Weight of the Sei Whales Located in the Adjacent Waters of Japan (II). 133-141 Nishiwaki, M. On the Sexual Maturity of the Antarctic Male Sperm Whale (*Physeter. catodon L.*) 143-149 Ohta, K. and Others. Composition of Fin Whale Milk. 151-167

NUMBER 11, JUNE 1956

Omura, H. and Sakiura, H. Studies on the Little Piked Whale from the Coast of Japan. 1-37

- Nishiwaki, M., Hibiya, T. and Kimura, S. On the Sexual Maturity of the Sperm Whale (*Physeter catodon*) Found in the North Pacific. 39-46
- Fujino, K. On the Body Proportions of the Sperm Whales (Physeter catodon). 47-83
- Fujino, K. On the Serological Constitution of the Fin Whales II. Further Studies on Blood Groups. 85-98
- Nemoto, T. On the Diatoms of the Skin Film of Whales in the Northern Pacific. 99-132
- Hoshina, T. and Sugiura, Y. On a Skin Disease and a Nematode Parasite of a Dolphin, *Tursiops truncatus* (Montagu, 1821). 133-138
- Iwai, E. Descriptions on Unidentified Species of Dibranchiate Cephalopods. I. An Oegopsiden Squid belonging to the Genus Architeuthis. 139-151
- Iwai, E. Descriptions on Unidentified Species of Dibranchiate Cephalopods. II. A Cranchiidae Squid of the Genus *Taonius*. 153-161
- Uda, M. and Nasu, K. Studies of the Whaling Grounds in the Northern Sea-Region of the Pacific Ocean in Relation to the Meteorological and Oceanographic Conditions. (Part I). 163-179
- Kimura, S. and Nemoto, T. Note on a Minke Whale Kept Alive in Aquarium. 181-189
- Ishikawa, Y. A Characteristic Property of Whale Oils concerning the Absorption of Gases. I. On the Absorption of Carbon Dioxide by Whale Oils. 191-213

NUMBER 12, JUNE 1957

- Omura, H. Osteological Study of the Little Piked Whale from the Coast of Japan. 1-21
- Nishiwaki, M. Age Characteristics of Ear Plugs of Whales. 23-32
- Nemoto, T. Foods of Baleen Whales in the Northern Pacific. 33-89
- Nasu, K. Oceanographic Conditions of the Whaling Grounds in the Waters Adjacent to Aleutian Islands and the Bering Sea in Summer of 1955. 91-101
- Kimura, S. The Twinning in Southern Fin Whales. 103-125
- Ichihara, T. An Application of Linear Discriminant Function to External Measurements of Fin Whale. 127-189

Nishiwaki, M. Very Small Embryo of Cetacea. 191-192

Nishiwaki, M. One-eyed Monster of Fin Whale. 193-195

Ogawa, T. and Kamiya, T. A Case of the Cachalot with Protruded Rudimentary Hind Limbs. 197-208

- Uda, M. and Dairokuno, A. Studies of the Relation between the Whaling Grounds and the Hydrographic Conditions. (II) A study of the Relation between the Whaling Grounds off Kinkazan and the Boundary of Water Masses. 209-224
- Abe, T. Notes on Fishes from the Stomachs of Whales Taken in the Antarctic. I. Xenocyttus nemotoi, a New Genus and New Species of Zeomorph Fish of the Subfamily Oreosominae (Goode and Bean, 1895). 225-233
- Tsuyuki, H. On the Oils Contained in Various Blubbers of Northern Elephant Seal, Mirounga angustirostris. 235-240

NUMBER 13, SEPTEMBER 1958

Omura, H. North Pacific Right Whale. 1-52

Nishiwaki, M. and Kamiya, T. A Beaked Whale Mesoplodon Stranded at Oiso Beach, Japan. 53-83

- Nishiwaki, M. and Handa, C. Killer Whales Caught in the Coastal Waters off Japan for Recent 10 Years. 85-96
- Ohsumi, S. (Kimura) Nishiwaki, M. and Hibiya, T. Growth of Fin Whale in the Northern Pacific. 97-133
- Nishiwaki, M., Hibiya, T. and Ohsumi, S. (Kimura). Age Study of Sperm Whale Based on Reading of Tooth Laminations. 135-153
- Nishiwaki, M., Ichihara, T. and Ohsumi, S. (Kimura). Age Studies of Fin Whale Based on Ear Plug. 155-169

Fujino, K. On the Serological Constitution of Fin Whale III. Human B Blood Group Substances in Erythrocytes and Some Notes on Anti-fin Ju Specific Antibodies. 171–184

Nemoto, T. Cocconeis Diatoms Infected on Whales in the Antarctic. 185-191.

Nemoto, T. and Nasu, K. Thysanoessa macrura as a Food of Baleen Whales in the Antarctic. 193-199

Ichihara, T. Gray Whale Observed in the Bering Sea. 201-205

Ohsumi, S. (Kimura). A Descendant of Moby Dick or a White Sperm Whale. 207-209

Nasu K. Deformed Lower Jaw of Sperm Whale. 211-212

Omura, H. Note on Embryo of Baird's Beaked Whale. 213-214

Uda, M. and Suzuki, N. Studies of the Relation between the Whaling Grounds and the Hydrographic Conditions. III. 215-229

Seki, Y. Observations on the Spinal Cord of the Right Whale. 231-251

- Kamiya, T. How to Count the Renculi of the Cetacean Kidneys, with Special Regard to the Kidney of the Right Whale. 253-267
- Hosokawa, H. and Sekino, T. Comparison of the Size of Cells and Some Histological Formations between Whales and Man. 269-301

Ogawa, T., Tsunoda, T. and Osawa, M. Amino Acid Composition of Whale Meat. 303-307

Ishikawa, Y. A Characteristic Property of Whale Oils Concerning the Absorption of Gases II. On the Absorption of Nitrogen by Whale Oils. 309-321

Tsuyuki, H. Component Fatty Acids of Northern Elephant Seal Oil. 323-332

NUMBER 14, SEPTEMBER 1959

Omura, H. Bryde's Whales from the Coast of Japan. 1-33

Nishiwaki, M. and Kamiya, T. Mesoplodon stejnegeri from the Coast of Japan. 35-48

- Nishiwaki, M. Humpback Whales in Ryukyuan Waters. 49-87
- Cushing, John E., Fujino, K. and Takahashi, K. Glycerol-freezing Technique as an Aid in Blood Typing of Whales. 89–100
- Fujino, K. and Cushing, John E. Blood Typing of Dried Whale Erythrocytes with ¹³¹I Labelled Antibody. 101-106

Ichihara, T. Formation Mechanism of Ear Plug in Baleen Whales in Relation to Glove-finger. 107–135 Nasu, K. Surface Water Condition in the Antarctic Whaling Pacific Area in 1956–57. 137–143

Ohsumi, S. (Kimura). A Deformed Fin Whale Fetus. 145-147

Nemoto, T. Food of Baleen Whales with Reference to Whale Movements. 149-290

Yamada, M. and Yoshizaki, F. Osseous Labyrinth of Cetacea. 291-304

Nakai, T. Distribution of Amino Acid in Proteins from Various Parts of Whale Body. 305-326

NUMBER 15, NOVEMBER 1960

Nishiwaki, M. Ryukyuan humpback whaling in 1960. 1-16

Ohsumi, S. Relative growth of the fin whale, Balaenoptera physalus (Linn.). 17-84

Fujino, K. Immunogenetic and marking approaches to identifying subpopulations of the North Pacific Whales. 85-142

- Nasu, K. Oceanographic investigation in the Chukchi sea during the summer of 1958. 143-158
- Tokita, K. and ECG Research Group. Electrocardiographical studies on Bottlenosed dolphin (Trusiops truncatus). 159-165

NUMBER 16, MARCH 1962

Omura, H. Bryde's whales occurs on the coast of Brazil. 1-5

Omura, H. Further information on Bryde's whales from the coast of Japan. 7-18

Nishiwaki, M. Ryukyuan whaling in 1961. 19-28

Nemoto, T. A secondary sexual character of fin whales. 29-34

Omura, H., Nishiwaki, M., Ichihara, T. and Kasuya, T. Osteological note of a sperm whale. 35-45

Ichihara, T. Prenatal dead foetus of baleen whales. 47-60

Nishiwaki, M. Mesoplodon bowdoini stranded at Akita beach, Sea of Japan. 61-77

Nishiwaki, M. Observation on two mandibles of Mesoplodon. 79-82

Sinclair, John. An early dolphin embryo (Stenella caeruleoalbus) in serial sections. 83-87

Nemoto, T. Food of ballen whales collected in recent Japanese antarctic whaling expeditions. 89-103

Uda, M. Subarctic oceanography in relation to whaling and salmon fisheries. 105-119

NUMBER 17, FEBRUARY 1963

- Nishiwaki, M., Ohsumi, S. and Maeda, Y. Change of form in the sperm whale accompanied with growth. 1-14
- Ohsumi, S., Kasuya, T. and Nishiwaki, M. The accumulation rate of dentinal growth layers in the maxillary tooth of the sperm whale. 15-35

Ichihara, T. Photometric method for counting laminae in ear plug of baleen whale. 37-48

Yoshikawa, T. and Suzuki, T. The lamination of the masseter of the humpback whale. 49-52

Fujino, K. Intra-uterine selection due to maternal-foetal incompatibility of blood type in the whales. 53-65

Cushing, J. E., Fujino, K. and Calaprice, N. The Ju blood typing system of the sperm whales and specific soluble substances. 67-77

Nemoto, T. New records of sperm whales with protruded rudimentary hind limbs. 79-81

Nemoto, T. and Nasu, K. Stones and other aliens in the stomachs of sperm whales in the Bering Sea. 83-91 Nishiwaki, M. Taxonomical consideration on *Genera* of *Delphinidae*. 93-103

Nasu, K. Oceanography and whaling ground in the subarctic region of the Pacific Ocean. 105-155

Nemoto, T. Some aspect of the distribution of *Calanus cristatus* and *C. plumchrus* in the Bering and its neighbouring waters, with reference to the feeding of baleen whales. 157-170

TSUYUKI, H. and Naruse, U. Studies on the oil of black right whale in the northern Pacific Ocean. 171-190 Yagi, T., Nishiwaki, M. and Nakajima, M. A preliminary study on method of time marking with lead-salt

and tetracycline on the teeth of northern fur seal. 191-195

NUMBER 18, MARCH 1964

- Fujino, K. Fin whale subpopulations in the Antarctic whaling areas II, III and IV. 1-28
- Ichihara, T. Prenatal development of ear plug in baleen whales. 29-48
- Ohsumi, S. Examination on age determination of the fin whale. 49-88
- Nemoto, T. School of baleen whales in the feeding areas. 89-110
- Okutani, T. & Nemoto, T. Squids as the food of sperm whales in the Bering Sea and Alaskan Gulf. 111-122
- Ohsumi, S. Comparison of maturity and accumulation rate of corpora albicantia between the left and right ovaries in Cetacea. 123-148
- Omura, H. A systematic study of the hyoid bones in the baleen whales. 149-170
- Nishiwaki, M. Revision of the article "Taxonomical consideration on genera of *Delphinidae*" in No. 17. 171-172
- Tsuyuki, H. & Naruse, U. Studies on the lipids in brain of black right whale in the northern Pacific Ocean. 173-180

