
Universal Decimal Classification

Second English full edition
FID publication no. 483

UDC 59 Zoology

Classification Décimale Universelle
CDU 59 Zoologie

Dezimalklassifikation
DK 59 Zoologie

Contents

	Page		Page
Foreword	Inside front cover	591.3	Embryology in general. Ontogeny.
Scope	1		Development of the individual
Related subjects	1	591.4	Study of animal organs. Organology.
Auxiliary signs and subdivisions	1		Anatomy. Zootomy
Typographic presentation	1	591.5	Animal habits (ecology). Ethology.
Bibliographical references	2		Animal and environment (bionomy)
Cooperating organizations	Back cover	591.6	Economic zoology. Applied zoology
		591.8	Animal histology
		591.9	Geographic zoology. Zoogeography.
Schedule			Fauna. Geographic distribution of
Special auxiliary subdivisions	3		animals
Principal divisions		592/599	Systematic zoology
591 General zoology	4		
591.1 Animal physiology	4	Alphabetical subject index	26
591.2 Diseases of (undomesticated) animals: pathology etc.	7		

Foreword

The English version of the Universal Decimal Classification (UDC) is being prepared and published as BS 1000 by the British Standards Institution (BSI) at the original joint request of the British Society for International Bibliography (BSIB) and the Association of Special Libraries and Information Bureaux (ASLIB), now amalgamated as Aslib. It has the approval of the Lake Placid Education Foundation, New York, proprietors of the Dewey Decimal Classification, from which UDC derives. The English full edition of the UDC is authorized by the International Federation for Documentation (FID), PO Box 30115, 2500 GC The Hague, Netherlands.

This section is part of the English full edition. It should be used in conjunction with the Abridged English Edition, BS 1000A, which refers to many other subjects of interest

not listed in this schedule, and provides a conspectus of the whole scheme, together with an introduction to its use. For further practical information about the principles, application and utilization of the scheme, users should refer to BS 1000C.

This edition of BS 1000 [59] supersedes material published as part of BS 1000 : Vol. 2, Part 3 : 1943. It includes modifications authorized in 'Extensions and Corrections to the UDC' (FID publication no. 248) up to and including Series 10, No. 2, dated June 1979. Subsequent issues of 'Extensions and Corrections to the UDC' should be consulted to keep the schedule up to date. British Standards related to this part of BS 1000 are listed on the inside back cover.

Scope

Under 59 is classed information about pure zoology, and a few aspects of applied zoology; but the main place for useful aspects of animals and their rearing is in the subdivisions of 63, and animal products occur at many places in UDC, especially subdivisions of 66. Veterinary science is classed at either 619 or 636.09. For the relation between zoology and palaeontology in UDC, see the note under 59 in the schedule.

Related subjects

- 159.929 Biopsychology. Behaviour of plants and animals. Comparative psychology
- 179.3 Cruelty to animals. Protection of animals — Ethics
- 343.58 Cruelty to animals — Law
- 351.765 Protection of useful animals. Extermination of harmful animals — Public administration
- 502 Nature. Nature study and conservation. Nature and wildlife protection
- 551.506.8 Phenology. Plants and animals regarded as meteorological indicators
- 551.586 Biometeorology. Bioclimatology
- 56 Palaeontology
- 57 Biological sciences
- 611 Anatomy
- 614.9 Animal hygiene. Veterinary hygiene
- 619 Diseases of (domesticated) animals. Veterinary science
- 629.112 Animal-drawn vehicles
- 636 Animal breeding in general. Livestock rearing etc.
- 637 Produce of domestic animals and game
- 638 Keeping, breeding and management of insects and other arthropods
- 639 Hunting. Fishing. Fish breeding
- 656.074 Transport of animals
- 656.12 Wheeled transport, animal-drawn
- 656.145 Riding. Pack transport. Herding and guiding of animals
- 664.32 Animal fats and oils — Solid foods
- 664.9 Preservation of animal products
- 665.2 Oils, fats and waxes of animal origin
- 667.271 Dyestuffs of animal origin
- 675 Leather industry. Processing of animal skins
- 677.3 Animal fibres — Textile industry
- 7.042 Animal life. Fauna — Subjects for artistic representation
- 727.62 Zoological garden (zoo) buildings, animal houses — Architecture
- 791.8 Menageries. Circuses. Exhibitions and performances involving trained or fighting animals
- 798 Riding. Driving. Horse and other animal sports
- 799 Fishing. Angling. Hunting. Shooting
- 929.624.22 Animals — Heraldry

Auxiliary signs and subdivisions

Full information about the common and special auxiliary signs and subdivisions (often abbreviated to 'common and

special auxiliaries') will be found in BS 1000A and BS 1000C.

Colon sign of relation. For the classification of information for the public, as in abstracts and bibliographies, maximum use of colon combinations rather than of common or special auxiliaries is recommended. The use of the colon sign of relation is preferable for multiple entry systems, as it will help prevent the concealment of information. This usually results in longer notation, however, and for information for more restricted use, the application of auxiliaries, where available, may be simpler and more convenient provided that there is an adequate alphabetical subject index.

Common auxiliaries. The common auxiliaries of language = . . . , form (0 . . .), place (1/9), race and nationality (= . . .), time " . . . ", point of view. 00 . . . , materials —03 . . . and persons —05 . . . are applicable throughout the UDC. However, they should be used mainly to express concepts not otherwise provided for in the schedules. Examples of colon combination and of Table I(i) 'Common auxiliaries of point of view' are given under 59 in the schedule.

Alphabetic extension (Table I(h)) may be used for names of genera and species where subdivision is required in greater detail than that of the schedule, e.g.

- 599.74 Carnivora
- 599.742.7 Family *Felidae*
- 599.742.7FELIS Genus *Felis*
- 599.742.7FELIS CATUS Species *Felis catus*, the domestic cat
- FELIS LEO Species *Felis leo*, the lion
- FELIS SYLVESTRIS Species *Felis sylvestris*, the European wild cat
- FELIS TIGRIS Species *Felis tigris*, the tiger

Special auxiliaries. The special auxiliary subdivisions 59.018/.08 are valid throughout 59, and may be detached and applied to any subdivision of that number, e.g.

- 59.085 Experiments and observations on animal organs and tissues
- 597.828.085 Experiments and observations on organs and tissues of *Ranidae* (frogs)

The subdivisions of 59.018 and 59.08 are derived from those of 57.018 and 57.08 respectively, where fuller information may be found. The subdivisions of 591 may be converted into special auxiliaries by replacing the digits 59 with a hyphen (see example under 59—1), as may also those of 592/599 (see example under 59—2/—9). The .04/.05 auxiliaries are valid only under 591.

Typographic presentation

Small type is used for cancelled numbers and text. The arrow → means either 'see' or 'see also' according to the context. The symbol ≅ 'subdivide as' means that the number preceding it may be subdivided in the same way as, and with meanings analogous to the subdivisions of, the number which follows it.

Bibliographical references

59

CLAUS, Carl and GROBBEN, Karl. *Lehrbuch der Zoologie . . . neubearbeitet von Dr. K. Grobben*. Marburg, 1904-5.

INSTITUT INTERNATIONAL DE BIBLIOGRAPHIE. *Classification décimale universelle . . . Edition complète* [2nd edition]. Brussels: I.I.B., 1927-33. 4 vol. [Section 59 is in Vol. I, dated 1927-29.]

ZITTEL, Carl Alfred von. *Grundzüge der Palaeontologie (Palaeozoologie)*. Munich and Leipzig, 1895.
An English edition appeared as:

Text-Book of Paleontology. Ed. Charles R. Eastman . . . English edition revised and enlarged by the author and editor. London: Macmillan, 1913-32. 3 vol.

595.76

WINKLER, A. *Catalogus Coloeopterorum regionis palaearcticae*. Vienna, 1924-32.

595.79

SCHMIEDEKNECHT, H. L. Otto. *Die Hymenopteren Nord- und Mittelueropas*. Jena, 1930.

598.2

REICHENOW, A. *Die Vögel, Handbuch der systematischen Ornithologie*. Stuttgart, 1913-14. 2 vol.

SCHEDULE

59 ZOOLOGY

Sections 562/569 and 592/599 are in general subdivided as far as families; complete parallelism between zoology and palaeozoology has been preserved. The following served, with few exceptions, as the basis of the systematics: Claus-Grobbe (1904-5); Zittel (1895) (see bibliographical references, page 2); but the systematics of these two works could obviously not be adopted without change, since it was necessary to reconcile them, both with each other and with the second international edition of the UDC (1927/1933).

New genera and species whose systematic positions are not yet determined are classed temporarily at the number for the next superordinate established group, if necessary with the addition of the abbreviations *n. gen.* (*novum genus*) or *n.sp.* (*nova species*). Palaeozoology — All works about fossil animals are classed under 562/569, which is completely parallel with 592/599. Alternatively, or as added entries, they may be classed under 592/599 with the addition of the symbol † to indicate extinct animals. Information about both fossil and living forms is classed primarily under 592/599, with the addition of the symbol *†, but added entries should be made under 562/569. Works about fossil animals considered stratigraphically all go under 562/569.

Zoological information can often be classified from various points of view, e.g. a work about mimicry in Canadian lepidoptera might be classed in three places:

591.57 Defence. Attack

591.9(71) Fauna of Canada

595.78 Lepidoptera

These numbers may be used in colon combination, e.g.

591.57:591.9(71):595.78 Defence — fauna of Canada — lepidoptera (see also the hyphen auxiliaries described under 'Special auxiliary subdivisions' below)

Further particulars may also be denoted by colon combination, e.g.

59:001.4 Zoological nomenclature

:061.2 Zoological societies

:061.3 Zoological conferences

:061.62 Zoological research establishments

:069.02 Zoological museums

:38 Trade in animals

:398.2 Animals in legends, folk tales etc.

:7.042 Animals in art

:92 Biographies of zoologists

and by Table I(ii) Common auxiliaries of point of view, e.g.

59.001 Zoological theory, concepts, definitions

.002 Zoological practice, scientific method

.006 Space, site, accommodation for animals.

Zoological gardens, animal reserves etc.

:502.74 For protection of animal life, fauna

.007 Zoological personnel. Zoologists

.009 Social and ethical questions. Animals in society, in nature

Special auxiliary subdivisions

- 59—1 General zoological characteristics
The subdivisions of 591 may be used as special auxiliary subdivisions by replacing the first two digits with a hyphen, e.g.
59—157 Defence. Attack (from 591.57)
595.78—157 Defence (including protective colouring) in lepidoptera
filed with other information about lepidoptera
- 2/—9 Particular animals and classes of animal
If it is required to subordinate information about particular kinds of animal to that about general zoological characteristics, then the subdivisions of 592/599 may be used as special auxiliary subdivisions by replacing the first two digits with a hyphen, e.g.
59—578 Lepidoptera (from 595.78)
591.57—578 Defence (including protective colouring) in lepidoptera
filed with other information about animal defence
- 59.018 External characteristics and traits
59.018 ≅ 57.018
- .061 External characters [cancelled] → 59.018
- .1 Form [cancelled] use 59.018.2
- .6 Colour [cancelled] use 59.018.6
- .63 Pattern. Distribution of colour [cancelled] use 59.018.62
- .633 Variations [cancelled] use 59.018.63
- .634 Albinos [cancelled] use 59.018.634

- 59.08 Technique, experimental methods and equipment in zoology
59.08 ≅ 57.08, e.g.
- 59.082 Laboratory and museum techniques for animal specimens and collections.
Cf. 59:069.02
- .1 Specimen acquisition, identification and reconstruction
- .11 Methods of acquisition. purchase, exchange, collection
- .114 Methods and equipment for capture (alive or dead) of animals
- .2 Specimen care, nutrition, breeding
- .083 Microbiological, virological and immunological methods and techniques applied to animals
- .084 Experiments and observations on whole living animals
- .085 Experiments and observations on animal organs and tissues (in vivo, in vitro)
- .086 Cytological and histological techniques, including microscopy
- .087 Methods and techniques for parameter estimation and recording of zoological data. Measurement etc.
- .088 Special methods (chemical, physical) for studying zoological molecules
- .089 Biomedical methods. Physiological, surgical, histopathological and related techniques
→ 616—089 Operative treatment etc.
Surgery
For veterinary science → 619
Surgical instruments may be denoted by colon combination with the subdivisions of 615.47

591 GENERAL ZOOLOGY

Special auxiliary subdivisions for 591

591.04	Physics and chemistry of cells and organisms in general. Absorption	591.112	Circulation
.041	Influence of the nucleus and protoplasm.	.1	Physiology of the cardiac muscles. Stimulus formation. Sensitivity. Frequency of the heartbeat
	Irritability in general	.2	Activity of the heart. Valves. Cardiac sounds. Cardiac beat. Electrocardiogram
	→ 591.181 Excitability and physiology of the nerves in general	.3	Blood pressure and blood flow
.044	Effect of the physical and chemical factors of the environment on cells and organisms.	.4	Vascular nerves. Vasomotor fibres. Presso-receptor nerves
	Osmosis. Tropisms in general. Heliotropism.	.5	Blood volume. Circulation time
	Phototropism. Effect of poisons. Atmospheric pressure	.6	Fluctuations without circulation
	→ 591.185 Senses. Tropisms	.113	Haemolymph. Lymph of invertebrates
	591.5 Habits. Ecology. Ethology. Bionomy	.1	→ 591.144 Lymphatic system of vertebrates
.046	Combined effects of cells and organs (synergism). Division of labour	.2	Fluid of the body-cavity where blood is simultaneously present
.1	Extensive division of labour in dissimilar cells	.115	Fluid of the ambulacral system of echinoderms
.2	Intensive division of labour in homogeneous cells	591.12	Fluid pressure inside a body. Turgor
.3	Successive division of labour. Formation of reserve cells. Substitution	.121	RESPIRATION
.4	Adaptation to increased or diminished demands	.1	General physiology of respiration
.047	Transport of material in the body	.2	Respiratory movement. Physics of respiration.
.1	From cell to cell	.3	Size of gaseous-exchange surface
.2	Migratory cells	.122	Chemistry of respiration. Blood gases
.3	Diffusion	.123	Respiratory capacity of blood. Oxygen in the blood. Respiratory quotient
.4	In cavity systems	.124	Respiration over the whole surface of the body.
	→ 591.41 Circulatory organs. Circulatory system. Angiology	.125	Cutaneous respiration
	591.416 Course of vessels in the lower animals. Lacunae. Gastrovascular system	.126	Respiration by aquiferous organs. Respiration by the gastrovascular system. Intestinal respiration.
	591.461.1 Excretory organs in invertebrates. Protonephridia etc.	.127	Respiration by swallowing. Respiration by swim bladders
.05	Physiological chemistry and metabolism in general. Composition of the body	.128	Intramolecular respiration
	→ 591.133.2 Anabolism. Assimilation of nutrients	.1	Respiration by branchiae
	591.149 Excretions. Catabolism	.2	Respiration by tracheae
.08/.089	<i>No longer primarily listed here. → 59.08</i>	.3	Respiration by lungs
		.4	Animal heat
			Poikilothermal, 'cold-blooded' animals (of variable body temperature)
			Homoeothermal, 'warm-blooded' animals (of constant body temperature)
			Level of body temperature
			Temperature regulation. Hair or feather coverings. Fat layers. Contraction, reduction of surface area. Raising of respiration and perspiration rates
Principal divisions (continued)			
591.1	ANIMAL PHYSIOLOGY	591.13	NUTRITION. INANITION
	<i>Here is classed information about the physiology of non-human animals</i>	.131	Seizure and comminution of food. Mastication.
	<i>For human physiology → 612; comparative studies of human physiology with that of other vertebrates also go at 612</i>	.1	Saliva
.04/.05	<i>Unchanged but no longer listed primarily here. → 591.04/.05</i>	.11	The act of feeding in general. Feeding behaviour, ways of ingesting food
591.11	BLOOD. BODY FLUIDS IN GENERAL.	.12	Filter feeders
	CIRCULATION	.13	Sand eaters
.111	General chemical and physical properties of the blood	.14	Snarers
	<i>Further particulars may be denoted by the special auxiliaries listed under 59 and 591, e.g.</i>	.15	Grinders
	591.111.05 Chemical composition of the blood. Blood salts. Salt concentration	.16	Tearers
.1	Composition of the blood. Erythrocytes (red corpuscles). Leucocytes (white corpuscles). Thrombocytes (blood-platelets). Plasma (blood fluid). Serum. Fibrin	.2	Juice suckers
.2	Colouring matter of the blood. Haemoglobin. Haemocyanin. Echinochrome. Chlorocruorin. Haemerythrin. Achroglobin	.3	Killing of the prey
.3	Congeaing, clotting, coagulation of blood.	.4	Mastication. Saliva. Salivary acid
.4	Haemolysis	.132	Digestion outside the mouth. Secretions for dissolution of nutrients outside the body
.7	Physical properties of the blood. Temperature. Viscosity. Osmotic pressure	.1	Digestion
.8	Phagocytosis. Ingestion of foreign substances by leucocytes	.2	→ 577.15 Enzymes. Catalysts of biological reactions. Enzymology
	Reticulo-endothelial defence system. Defence materials. Antibodies. Precipitin reaction	.3	<i>Further particulars may be denoted by the special auxiliaries listed under 59 and 591, e.g.</i>
		.4	591.132.05 Chemistry of digestion.
		.5	Intracellular digestion
			Mechanics of the stomach
			Physiology of the stomach. Gastric juices
			Rumination
			Vomiting
			Physiology of the midgut. Intestinal juice.
			Pancreatic juice. Bile, gall

- 591.132.6 Digestion with the help of symbionts
 → 591.557.6 Symbiosis (living together with mutual advantage)
- .7 Dependence of the intestinal canal on the form of nutrition of the animal. Functional adaptation
- .8 Regurgitation. Expulsion of indigestible elements in the food through the mouth. Castings, pellets
- .133 **Physiological chemistry of foods and of nutrition**
- .1 Foods, nutrients
- .11 Proteins
- .12 Fats
- .13 Carbohydrates
- .14 Water
- .15 Minerals
- .16 Vitamins
 → 577.16 Vitamins and vitamin-like substances. Vitaminology
- .2 Synthetic metabolism. Assimilation of nutrients. Enzymes. Ferments. Anabolism. Catabolism
 Further particulars may be denoted by colon combination, e.g.
 591.133.2:577.25 Metabolism in relation to enzymes, ferments
- .3 Food reserves and food storage in the animal body
- .31 Storage of fat
- .32 Storage of glycogen
- .33 Storage of protein
- .134 **Growth**
- .1 Growth factors
- .2 Rate of growth
- .3 Periodicity of growth
- .4 Course and duration of individual growth phase
- .5 Weight and bulk of the body
- .6 Ratio between body mass and body size
- .135 **Physiology of the hindgut. Defecation. Evacuation of the intestine**
 → 591.149 Excretions. Catabolism
- .137 **Uptake of nutrients and digestion in Protozoa**
- .139 **Senescence. Phenomena of ageing. Length of life. Rejuvenation. Death. Causes of death**
- 591.14 **SECRETIONS. EXCRETIONS. LYMPH. GLANDS IN GENERAL**
- .141 **Cutaneous secretions. Skin glands (function). Uropygial, coccygeal glands. Byssus glands. Scent glands. Poison hair glands. Nematocysts (stinging glands). Mucus glands. Sweat glands. Sebaceous glands. Tarsal (eyelid) glands (glands of Moll, Meibomian glands). Lacrimal (lachrymal) glands. Ceruminous glands**
 Here are classed only the function and secretions of glands. Glands themselves come under 591.4
- .142 **Secretions in Protozoa. Cyst-walls. Trichites. Polar capsules**
 For trichocysts → 591.479
- .143 **Serum, serous fluids. Serous cavities**
- .144 **Lymphatic system of vertebrates**
 → 591.44 Lymphatic system of vertebrates
 — Organology. Anatomy
- .1 Physiology of the lymphatic system
- .2 Constituents of the lymph
- .3 Physical properties of the lymph
- .4 Lymph glands. Spleen
 → 591.113 Haemolymph. Lymph of invertebrates
- .145 **Poisons. Poison glands**
 For oral glands generally → 591.431.6
- .1 Poison glands in general
- .2 Poisons. Toxins
- .3 Toxic action, effect
- .4 Antitoxins. Antivenins. Antidotes
- .146 **Secretions of the mammary glands. Milk**
- 591.147 **Internal secretions. Endocrine secretions. Hormones**
 → 577.17 Hormones and hormone-like substances (hormonoids) — Biochemistry
 Further particulars may be denoted by the special auxiliaries listed under 591, e.g.
 591.147.046 Hormonal balance. Synergism. Antagonism
- .1 Thyroid gland: thyroxin
- .2 Parathyroid glands
- .3 Thymus gland
- .4 Pituitary gland (hypophysis cerebri)
- .42 Hormone of the anterior lobe: antuitrin
- .44 Hormone of the posterior lobe: pituitrin
- .5 Pineal gland (epiphysis cerebri)
- .6 Suprarenal capsules (adrenals): adrenalin
- .7 Islets of Langerhans in the pancreas: insulin
- .8 Gonads (sex glands): sex hormones (androgens, oestrogens)
- .83 Oestrous cycle (female sexual cycle)
- .148 **Luminescence**
 → 535.37 Luminescence etc. — Optics
 591.557.6 Symbiosis (living together with mutual advantage)
- .1 Intracellular luminescence
- .2 Secretory luminescence
- .149 **Excretions. Catabolism**
- .1 Physiology of kidneys and renal system
- .11 Mechanism of urine formation
- .12 Ammoniac salts. Guanin. Uric acid. Urea. Hippuric acid. Hypoxanthin
- .13 Volume of urine
- .2 Excreta. Faeces. Honeydew. Guano
- .3 Gaseous excretions. Carbonic acid
- .4 Excreted migratory cells
- .7 Sepia pigment
- .8 Contractile vacuoles. Excreted granules
 For contractile vacuoles as organelles → 591.430.5
- 591.15 **VARIATION. HEREDITY**
 Further particulars may be denoted by colon combination with the subdivisions of 575.1
- .151 **General polymorphism. Dimorphism**
- .1 Seasonal polymorphism
 → 591.543.4 Alternation of climatic conditions. Seasons
- .2 Generational polymorphism
- .3 Functional polymorphism
- .4 Universal polymorphism
- .152 **Geographic variation. Acclimatization**
- .153 **Heterophagous variation**
- .155 **Mimicry. Imitative (mimetic) variation**
 → 591.57 Defence. Weapons. Protective colouring etc.
- .156 **Sexual polymorphism**
- .157 **Variation of colour. Coloration (pigmentation). Albinism. Melanism**
- .158 **Cross-bred (bastard) forms. Mongrels. Hybrids**
- .1 Species hybrids
- .2 Genus hybrids
- .159 **Monstrous forms. Terata (monsters). Anomalies, abnormalities**
 → 591.2 Diseases of (undomesticated) animals: pathology etc.
 616—007 Defective structural development. Anomalies. Teratology etc.
- 591.16 **GENERATION, PROCREATION, REPRODUCTION, BREEDING. BIOGENESIS. DEVELOPMENT**
 → 57.017.5 Reproduction. Sex and sexuality — Biological sciences in general
 591.56 Provision for posterity. Care of the young

591.161	Abiogenesis (spontaneous generation) → 573.552 Abiogenic origin of primary matter — General and theoretical biology	591.174.9	Flight behaviour, flight patterns → 591.543.43 Regular (seasonal) migration. Bird migration. Migration to spawning grounds
.162	Parthenogenesis	.175	Physiology of the muscles
.163	Paedogenesis (reproduction in immature — larval or pupal — stages)	.1	Electric components
.5	Dissogeny (double occurrence of sexual maturity, at different stages of development)	.4	Mechanics of muscle movement
.164	Division (fission) in Protozoa	.5	Essential conditions for muscles
.1	Binary fission	.6	Excitation of the muscles, stimulus. Response → 591.182 Nerves and muscles
.2	Multiple fission. Successive division	.7	Energy exchange and material exchange (metabolism) in muscles
.3	Disintegration. Simultaneous multiple division	.176	Skin. Pigment. Colouring matter
.165	Vegetative propagation. Asexual reproduction For formation of colonies → 591.552	.2	Production of pigment in the animal body → 591.157 Variation of colour. Coloration (pigmentation). Albinism. Melanism <i>Particular colours may be denoted by colon combination with the subdivisions of 535.6—2</i>
.1	Division (fission) in the Metazoa	.3	Colour produced by interference or diffraction of light
.2	Gemmation (budding)	.177	Mechanics of the skeleton and joints
.3	Fragmentation. Frustulation. Laceration. Stolization	.178	Protoplasmic movement. Ciliary movement
.4	Internal budding. Gemmulae. Statoblasts	.1	Temporary hardening of the outer plasma layer
.166	Gonochorism (sex distinction). Sexual reproduction in general	.2	Temporary hardening of the inner plasma.
.1	Mating. Copulation (including that of Protozoa)	.5	Axillary rod
.4	Neoteny (retention of larval characteristics in sexual maturity)	.6	Ciliary movement
.5	Alternation of generations	.591.18	Stroke velocity. Stroke efficiency
.51	Metagenesis: monogony — cytogony	.181	FUNCTIONS OF THE NERVOUS SYSTEM
.52	Alloeogenesis: heterogony. Parthenogenesis — amphigony	.182	Excitability and physiology of the nerves in general. Electrophysiology. Electrical properties of the nerves → 591.041 Influence of the nucleus and protoplasm. Irritability in general
.53	In Protozoa: copulation — division	.3	Autonomic movements, automatism
.6	Facultative parthenogenesis	.4	Unconditioned reflexes For complex automatisms → 512
.7	Polyembryony (formation of numerous animals from a single ovum)	.185	Nerves and muscles. Tonus. Reflex movements → 591.175 Physiology of the muscles 591.181 Excitability and physiology of the nerves in general
.167	Hermaphroditism	.186	Senses (reception). Tropisms. Taxes → 576.333 Taxes. Tropisms (cytological foundation) 591.044 Effect of physical and chemical factors of the environment. Tropisms etc.
.1	Cross-fertilization of hermaphrodites (alogamy)	.1	Faculty of orientation
.2	Self-fertilization of hermaphrodites (autogamy (1))	.2	Mechanical senses
.8	Conjugation in Protozoa	.21	Sense of touch (tactile sense)
.9	Autogamy (2) (fusion of descendants of a single mother cell)	.22	Receptivity to internal stimuli (proprioception)
.169	Regeneration	.23	Muscular sensation
.1	Physiological regeneration. Replacement of hair and teeth. Casting and renewal of antlers. Sloughing (casting of skin). Moulting. Replacement of epidermis, nails, claws	.24	Sense of gravity (georeception). Geotaxis.
.2	Occasional (reparative) regeneration. Repair of injuries	.25	Sense of balance (equilibrium)
.3	Functional orthopaedics. Regulation by remodelling, re-formation	.26	Sense of temperature (thermoreception). Thermotaxis
.4	Compensatory regulation	.3	Sense of fluid flow or current (rheoreception). Rheotaxis
.5	Reduction and restitution	.31	Chemical sensitivity (chemoreception). Chemotaxis → 591.044 Effect of the physical and chemical factors of the environment on cells and organisms
.6	Atypical regeneration	.34	Sense of taste (gustation)
.7	Relations between regeneration and the individual's level of organization	.4	Sense of smell (olfaction)
.8	Autotomy. Self-amputation	.5	Sense of smell (cancelled) — 591.185.34
591.17	MOVEMENT. LOCOMOTION. PHYSIOLOGY OF THE SKELETON AND ORGANS OF LOCOMOTION Further particulars may be denoted by the special auxiliaries described under 59 (and listed in full under 57), e.g. 591.17.087.27 Speed of locomotion (and its measurement)	.6	Sense of hearing (audition)
.171	Locomotion by means of the legs. Walking. Running. Striding. Hopping. Jumping. Climbing. Quadruped movements: walk, trot, gallop, amble	.61	Sense of light (photoreception)
.172	Reptation. Creeping, crawling. Slithering	.62	Perception of light and darkness. Skin sensitivity to light (dermatopsy)
.173	Swimming. Gliding in water	.63	Optical perception of direction
.174	Flying	.64	Optical perception of movement
.1	Gliding flight	.641	Perception of images
.2	Flapping, fluttering flight	.642	Accommodation
.3	Sweeping, undulating flight. Rowing motion. Darting	.65	Variations of the pupils
.4	Kite-like flight	.66	Phototaxis
.5	Coasting. Hovering. Circling	.67	Phototropism
.6	Other kinds of flight		Sense of colour
.8	Flight efficiency, performance		

591.186	Hypnosis	591.342	Larval forms of arthropods
.187	Responses to stimuli in Protozoa	.1	Nauplius
	<i>The main place for the following taxes is in 591.185, but certain responses are peculiar to Protozoa, and, to avoid scattering information about both common and peculiar responses, the subdivisions 591.187.2/6 may be used</i>	.2	Zoea
.2	Locomotion reactions	.3	Schizopod stage
.4	Discrimination. Alarm reaction. Chemotaxis. Thermotaxis. Phototaxis	.5	Insect larvae. Caterpillars. Maggots
.6	Positional reactions. Galvanotaxis. Geotaxis	.6	Pupae
		.343	Larval forms of Tunicata and vertebrates
591.2	DISEASES OF (UNDOMESTICATED) ANIMALS: PATHOLOGY ETC.	591.35	YOUNG ANIMALS
	<i>For veterinary science → 619</i>		Special auxiliary subdivisions for 591.35
	<i>For animal husbandry and breeding → 636</i>	591.35.02	Twins and research on twinning. Multiple births
	<i>Further particulars may be denoted by colon combination, e.g.</i>	.021	Monozygotic (monochorionic, 'identical') multiples
	591.2:592/559 Diseases of particular orders, genera, species	.022	Dizygotic and polyzygotic ('non-identical', 'fraternal') multiples
	:616 Particular diseases of animals		Principal divisions (continued)
.21	Circulatory system	591.351	Duration of development stage, up to sexual maturity
.22	Respiratory system	591.36	SEXUALLY MATURE ANIMALS
.23	Digestive system	.361	Once-breeding, single-brood animals
.24	Lymphatic system	.362	Twice-breeding, two-brood animals
.26	Urogenital system	.363	Repeatedly-breeding animals
.27	Organs of locomotion	.366	Length of interval between breeding seasons (heats, ruts). Gestation period. Suckling period
.28	Nervous system	591.37	HYBRIDIZATION. CROSSING. CROSS-BREEDING. INTERBREEDING
.29	Somatology		→ 591.158 Cross-bred (bastard) forms. Mongrels. Hybrids
591.3	EMBRYOLOGY IN GENERAL. ONTOGENY. DEVELOPMENT OF THE INDIVIDUAL	591.38	INBREEDING (CONSANGUINEOUS BREEDING, BREEDING IN-AND-IN)
	→ 57.089.3 Embryological techniques — Biological sciences	591.39	EXPERIMENTAL EMBRYOLOGY. MECHANICS OF DEVELOPMENT
	591.463.1 Sperm. Spermatogenesis		→ 591.089.843 Grafting, implantation, transplantation etc.
	591.465.1 Eggs. Oogenesis	.391	Experiments on ova and spermatozoa
	<i>The development of particular organs is classed under 591.4</i>	.1	Artificial fertilization
591.31	PRIMARY DEVELOPMENT OF THE EGG	.2	Artificial parthenogenesis
.313	Fertilization of the egg	.392	Experimental alteration of embryonic development. Determination of the power of development
.315	Segmentation	.1	Artificially produced terata (monsters)
.316	Morula	.2	Artificial tumours
.317	Blastula	.393	Experiments on larvae. Experimental alteration of metamorphosis
591.32	FORMATION OF THE EMBRYONIC RUDIMENTS	.398	Experiments on surviving embryonic parts
.321	Gastrula	591.4	STUDY OF ANIMAL ORGANS. ORGANOLGY. ANATOMY. ZOOTOMY
.322	Germinal layers. Germinal streaks		→ 611 Anatomy — Medical sciences (human)
.1	Endoblast		<i>The subdivision of 591.4 is roughly parallel with that of 611</i>
.2	Ectoblast		Special auxiliary subdivisions for 591.4
.3	Mesoblast	591.4.068.1	Change of function
.4	Primitive streak	.2	Atrophy
.323	Blastopore	.3	Transitory organs
.324	Primitive sex cells	.4	Rudimentary organs
591.33	EMBRYONIC DEVELOPMENT WITHOUT THE LARVAL STAGE	.5	Homologous organs
.331	Ectoderm	.6	Analogous organs
.333	Endoderm		Principal divisions (continued)
.335	Mesoderm. Mesenchyme	591.41	CIRCULATORY ORGANS. CIRCULATORY SYSTEM. ANGIOLOGY
.336	Larval organs which later disappear. Retromorphosis		→ 591.11 Blood. Body fluids in general. Circulation
	<i>Further particulars may be denoted by colon combination with the subdivisions of 591.4</i>	591.85	Histology of the blood. Lymph. Leucocytes
.337	Larval organs where retromorphosis does not occur	.411	Pericardium
	<i>Further particulars may be denoted by colon combination with the subdivisions of 591.2</i>	.412	Heart
.339	Appendages of the embryo. Vitelline sac (yolk sac). Placenta. Chorion. Serosa (serous membrane). Amnion. Allantois	.413	Vessels. Arteries. Aorta
	→ 591.434.7 Allantois — Organology	.414	Veins. Portal vein
591.34	METAMORPHOSIS. LARVAL STAGE	.415	Capillaries
.341	Swarm cells (zoospores)		
.1	In sponges and Coelenterata		
.2	In worms and molluscs. Trocophores		
.3	In Echinodermata		

591.416	Course of vessels in the lower animals. Lacunae.	591.434.4	Intestinal canal without anus. Gastric chamber.
	Gastrovascular system		Osculum
.417	Echinoderm ambulacral system. Madreporites	.5	Intestinal glands in general
		.7	Allantois
591.42	RESPIRATORY ORGANS		<i>For allantois as appendage of embryo</i>
.421	Nose		→ 591.339
.422	Larynx	.435	Anus. Vent. Cloaca
.1	In vertebrates	.9	Ink sac (in cephalopods)
.3	Aquatic lungs (in Holothuroidea)	.436	Hepar. Liver. Midgut glands of invertebrates
.4	Lamellate lungs (in Arachnoidea), gill-books	.1	Midgut glands
.5	Resonating organs. Glottis. Vocal cords.	.2	Liver
	Tympanum	.3	Gall bladder
.6	Syrinx (lower larynx in birds)	.437	Pancreas. Hepatopancreas
.423	Trachea (in vertebrates), windpipe. Bronchi	.438	Coeloma. Body cavities. Peritoneum.
.424	Lungs		Pericardial glands. Mesenterium (mesentery)
.4	In land molluscs	.439	Corpora adiposa (fatty bodies)
.425	Pleura		
.426	Diaphragm	591.44	LYMPHATIC SYSTEM OF VERTEBRATES
.428	Branchiae. Branchial arches		→ 591.144 Lymphatic system of vertebrates
.1	Arthrobranchiae		— Animal physiology
.2	Gills of invertebrates. Ctenidium	.441	Spleen
.3	Gills of Protochordata	.442	Lymphatic vessels. Lymph ducts. Lymph nodes
.4	Gills of fishes	.443	Thymus
.5	Gills of Amphibia	.444	Thyroid gland
.429	Other respiratory organs	.5	Parathyroid gland. Epithelial corpuscles
.1	Tracheae (in invertebrates), respiratory tubes	.445	Suprarenal glands. Suprarenal medulla
.2	Tracheate lungs	.446	Lymph glands
.3	Lamellate lungs (in scorpions)		
.4	Swim bladders	591.46	UROGENITAL SYSTEM. EXCRETORY
.5	Labyrinth organs		ORGANS. SEXUAL ORGANS. GONADS.
.6	Siphons (of molluscs). Gas ventricles		SEX GLANDS
591.43	ORGANS OF NUTRITION	.461	Excretory organs
.430	Organs of nutrition in Protozoa	.1	Excretory organs in invertebrates. Protone-
.1	Skin as organ of nutrition	.2	phridia. Metanephridia. Nephridia. Nephros
.2	Cytostome (cell mouth)	.3	Kidneys of vertebrates. Pronephros.
.3	Cytopyge (cytoproct, potential anus)	.4	Mesonephros, Wolffian body. Metanephros
.4	Food vacuoles	.5	Malpighian corpuscles
.5	Contractile vacuole	.462	Secondary excretory organs. Choragogen cells.
	→ 591.149.8 Contractile vacuoles. Excreted	.1	Nephrocytes. Phagocytes
	granules — Animal physiology	.2	Storage nephridia
.431	Mouth	.463	Urinary organs
.1	Proboscis for seizing food. Chitinous mandibles.	.1	Ureter
	Aristotle's lantern (in echinoderms)	.2	Vesica urinaria (urinary bladder)
.2	Mouth appendages of arthropods	.463	Male genital organs
.3	Tongue. Radula (in molluscs)	.1	Sperm. Spermatogenesis
.4	Teeth	.11	Spermatozoa. Shape. Head. Central body. Tail
	→ 591.169.1 Physiological regeneration.	.12	Spermatogenesis. Spermatogonia. Spermatocytes.
	Replacement of hair and	.15	Spermatids
	teeth etc.	.2	Quantity and size of spermatozoa
	591.471.31 Exoskeleton. Ganoid scales.	.3	Testes
	Placoid scales. Cutaneous teeth.	.4	Scrotum
	Bony plates	.5	Prostate
.42	Dentitions	.6	Spermatophores
.5	Keratinous (horny) formations. Beaks.	.464	Vas deferens
	Horny plates (baleen etc.)	.1	Male copulatory organs
	→ 591.478 Keratinous formations generally.	.3	Penis
	Hair, claws, feathers etc.	.6	Bulbus. Hectocotylus. Pterygopodia. Spadix.
.6	Oral glands. Salivary glands. Buccal glands.		Spicula
	Silk glands in Lepidoptera. Oral poison glands	.61	Secondary sexual characteristics
	→ 591.145 Poisons. Poison glands	.62	→ 591.156 Sexual polymorphism
.7	Cheek (buccal) pouches	.63	591.551 Relations between the sexes
.432	Pharynx. Oesophagus	.64	Organs for retention of the female. Cerci.
.1	Oesophagus (gullet, food-passage)	.641	Suckers. Bursa copulatrix (genital pouch)
.2	Pharynx	.642	Fighting organs
.3	Pharyngeal glands	.465	Organs for detecting females
.4	Ingluvies (crop)	.1	Excitatory sexual organs and signals.
.5	Foregut (proventriculus) in Arthropoda.	.11	Scent glands. Vocal organs. Cutaneous
	Honey-bags	.12	excrescences. Coloration
.433	Stomach. Ventriculus	.13	Permanent features
.1	Stomachs with one compartment. Gigeria,	.14	Intermittent, recurrent features
	bird and reptile gizzards	.15	Female genital organs
.2	Stomachs with more than one compartment	.2	Oogenetic processes
.3	Gastric glands		Ova. Eggs
.4	Chyle stomach		Oogenesis (ovum formation). Follicles.
.5	Gizzard in Arthropoda		Oogonia. Oocytes
.6	Abdominal cavity		Yolk (vitellus). Yolk formation
.434	Gut (intestine)		Ovum integument and its formation.
.1	Midgut (mesenteron). Spiral valves		Vitelline membrane, cell wall. Chorion.
.2	Caecum		Nidamental glands (in Cephalopoda)
.3	Rectum		Number and size of ova
			Oviduct

- 591.465.23 Albumen. Albumen production
.24 Eggshell (calcium, keratin). Shell formation.
Egg capsules. Egg cocoons
.3 Gonads
.31 Ovaries
.32 Ovotestis (ovariotestis), hermaphroditic gonad
.466 **Uterus. Uterine glands. Shell glands (in Platyhelminthes)**
.467 **Female copulatory organs**
.1 Vagina
.2 Vulva. Hymen
.3 Ovipositor. Ovipositor spike
.4 Receptaculum seminis
.469 **Mammae. Milk glands. Teats. Udders**
- 591.47 **ORGANS OF MOTION, LOCOMOTION**
.471 **Skeleton**
→ 591.115 Fluid pressure inside a body.
Turgor
.1 Skeletal formations in Protozoa. Integuments.
Rods. Scales. Shells. Endoskeletons
.11 Cilia. Flagella
.2 Skeletons of invertebrates
.21 Spongiaria. Sponges. Spicules
.22 Cnidaria. Nematophores. Supportive lamellae.
Calcareous structures of corals
.23 Echinoderma. Calcareous plates. Pedicellaria.
Spines
.24 Mollusca. Operculum. Maxilla. Shells.
Cuttle-bone
→ 591.431.3 Tongue. Radula (in molluscs)
591.557.82 Capsule formation. Pearls
.25 Brachiopoda. Shells. Calcareous spicules
.26 Annelida. Integument. Parapodia
.27 Arthropoda. Chitinous exoskeleton. Larval
integument
→ 591.134.3 Periodicity of growth
591.169.1 Physiological regeneration.
Replacement of hair and teeth.
Casting and renewal of antlers.
Sloughing (casting of skin).
Replacement of epidermis,
nails, claws
.271 Chitinous exoskeleton
.272 Schizopodal limbs (in Crustacea). Ambulatory
limbs. Maxillipeds
.273 Insect limbs
.274 Wings. Balancers. Halteres. Elytra
.28 Tunicata. Chorda dorsalis, notochord. Mantle
.29 Other invertebrates
.3 Osteology. Skeleton of vertebrates
.31 Exoskeleton. Ganoid scales. Placoid scales.
Cutaneous teeth. Bony plates
→ 591.431.4 Teeth
.32 Vertebral column and spinal cord
For notochord of Tunicata → 591.471.28
→ 591.482 Spinal cord — Nervous system
.321 Chorda dorsalis
.322 Vertebral column
.323 Neural arch
.324 Haemal arch
.33 Ribs and breastbone
.34 Scapular arch, shoulder-girdle
.35 Pelvic girdle
.36/.37 Limbs, extremities
.36 Unpaired limbs
.37 Paired limbs
.371 Fins. Flippers
.372 Upper arm. Upper leg, thigh
.373 Lower arm. Lower leg, calf
.374 Hand. Foot
.375 Wings
.376 Wing-membranes
.38 Skull [cancelled] → 591.471.4
.4 Skull. Cranium
→ 591.431.4 Teeth
.41 Cartilaginous skull in cartilaginous (gristly,
elasmobranch) fishes
.42 Skull bones in general
.43 Visceral cranium. Facial skeleton
.431 Gill arch (branchial arch, visceral arch)
- 591.471.432 Hyoid arch. Hyomandibular. Hyoidea
.433 Mandibular arch. Articular. Angular. Dental.
Opercular
.434 Palatinum. Pterygoid
.435 Upper mandibular arch. Premaxillary.
Maxillary. Jugal. Quadrate
.4 Auditory ossicles (incus, malleus, stapes)
.44 Cerebral cranium
.441 Ethmoidal region. Ethmoid. Nasal. Vomer
.442 Anterior sphenoid region. Frontal. Lacrimal
.4 Antlers. Bony socket of antlers
→ 591.478.81 Horns
.443 Posterior sphenoid region. Basisphenoid.
Alisphenoid. Parietalia. Squamosal
.444 Labyrinth region. Otis
.445 Occipital region. Occipitalia
.472 **Articulations, joints. Ligaments. Articular
membranes (in Arthropoda). Hinges (in
bivalves)**
.473 **Muscle. Myology**
.1 Fibrils of unicellular animals. Myoneme
.2 Muscular system of invertebrates. Myoseptum.
Ambulacral feet. Epithelial muscle cells (in
Cnidaria). Foot, siphon (in Mollusca)
.3 Muscular system of vertebrates
.31 Skeletal musculature. Voluntary muscle
.32 Visceral musculature. Involuntary muscle
.9 Electric organs
.474 **Tendons**
.475 **Mucus sac**
.476 **Connective tissue. (Conjunctive) parenchyma.**
Mesoderm. Mesenchyme
→ 591.335 Mesoderm. Mesenchyme —
Embryology
591.82 Histology of connective tissue
.477 **Skin. Suckers. Mantle (in Mollusca etc.)**
→ 591.87 Histology of the epithelium
.1 Ectoderm
.11 Cuticle
.12 Suckers. Suctorial pads
.13 Chaetae (chitinous bristles)
.14 Mantle (in Crustacea)
.15 Mantle (in Mollusca)
.2 Entoderm
.3 Epidermal glands
.31 Sweat glands
.32 Sebaceous glands. Uropygial glands.
Wax glands
.33 Mucus glands
.34 Scent glands
.35 Lacrimal glands
.36 Mammary glands
.37 Silk glands
.38 Sting glands
.39 Other epidermal glands. Byssus glands.
Tarsal (Meibomian) glands
.4 Poisonous (venomous) organs. Stings
→ 591.145 Poisons. Poison glands —
Physiology
591.431.6 Oral poison glands — Anatomy
.9 Luminous organs
.478 **Keratinous formations generally. Hair, claws,
feathers etc.**
.1 Hair. Prickles. Bristles
.6 Nails. Claws. Talons. Hoofs
.7 Feathers. Scales, squamae. Shells (in Reptilia)
.8 Horny excrescences
.81 Horns
→ 591.471.442.4 Antlers. Bony socket of
antlers
.82 Spurs
.479 **Pseudopodia. Cilia. Flagella. Cirri. Trichocysts**
- 591.48 **NERVOUS SYSTEM**
→ 591.88 Histology of nerve tissue
.481 **Central nervous system**
.1 Brain (encephalon) of vertebrates
.11 Forebrain. Telencephalon. Protencephalon
.12 Posterior forebrain. Diencephalon
(thalamencephalon)
.13 Midbrain. Mesencephalon

591.481.14	Afterbrain. Cerebellum. Metencephalon	591.498	Extremities, limbs. Pseudopods. Antennae.
.15	Hindbrain. Myelencephalon. Medulla oblongata		Prehensile arms. Fins, flippers. Wings. Feelers.
.2	Hypophysis (pituitary body)		Posterior limbs. Jaws, mandibles. Chelae
	For parietal eye → 591.481.3, 591.484.7		(pincers, crab-claws). Beaks, bills. Anterior limbs
.3	Pineal apparatus, including epiphysis (pineal body or gland) and parietal organ (pineal or parietal eye)	.5	Beaks. Bills
.4	Ganglia in general	.499	Appendages to the body. Elytra (wing-cases, shards). Insect wings. Tentacles
.41	Rope-ladder (scalariform, non-cerebral) nervous system	.6	Insect wings
.42	Cerebral ganglia. Supraoesophagal ganglia.	591.5	ANIMAL HABITS (ECOLOGY). ETHOLOGY.
.43	Brain of invertebrates		ANIMAL AND ENVIRONMENT (BIONOMY)
	Other ganglia		Protection against environmental factors may be denoted by colon combination with 502.747/.748
	→ 591.482.3 Ganglia of the spinal cord		
	591.482.4 Spinal ganglia		
.44	Lumbar portion of spinal cord	591.51	PSYCHOLOGY OF ANIMALS.
.8	Neurons (neurones)		INTELLIGENCE. INSTINCT
.482	Spinal cord		→ 159.929 Biopsychology. Behaviour of plants and animals. Comparative psychology
	→ 591.471.32 Vertebral column and spinal cord — Skeleton		591.18 Functions of the nervous system — Animal physiology
.1	Neural tracts	.511	Theory and philosophy of animal psychology.
.2	Grey and white matter		Animal souls
.3	Ganglia of the spinal cord	.512	Instinct. Instinctive behaviour
.4	Spinal ganglia	.1	Instinctive behaviour
.483	Peripheral nervous system. Sympathetic nervous system. Nerves	.12	Social instinct. Instinctive actions conducive to brood care
.484	Organs of sight	.13	Instinctive actions conducive to nutrition, feeding, e.g. web-building in spiders
.1	Vision cells	.14	Courtship. Instinctive actions conducive to breeding, reproduction
.2	Pigmentary ocelli	.16	Defence and flight. Self-preservation.
.3	Retina		Vigilance
.4	Lenticular eyes in invertebrates. Camera-like eyes	.2	Displacement reactions
.5	Facetted (compound, ommatidial) eyes	.5	Internal readiness, capacity, for instinctive actions
.6	Eyes of vertebrates	.6	Releasers (release stimuli)
.61	Lens	.513	Learning. Learning mechanisms
.62	Cornea	.2	Trial and error
.63	Iris	.3	Conditioning. Imprinting
.64	Eyelid. Nictitating membrane. Conjunctiva	.4	Habituation
	→ 591.477.35 Lacrimal glands	.5	Insight learning
.7	Parietal eye	.6	Latent learning
	→ 591.481.3 Pineal apparatus, including epiphysis		
.485	Organs of hearing. Ears	591.52	THE ANIMAL IN RELATION TO THE AREA
	→ 591.488.4 Labyrinthine organs		→ 574.2 Organisms and environment
	591.488.5 Organs of equilibrium (balance). Statocysts. Statoliths	.521	Style of habitation. Lairs, dens. Underground dwellings, burrows, earths. Nests as dwellings
.486	Organs of smell. Nose		For nests as brood care → 591.563
.487	Organs of taste. Chemoreceptors (chemical sense organs) in general	.522	Habitat
.488	Mechanical sense organs	.523	Single migrations
.1	Thermoreceptors (organs of heat sense)		→ 574.91 Migration. Change of habitat — General ecology
.3	Tactile (touch) sense organs		591.543.43 Regular (seasonal) migration
.4	Labyrinthine organs		591.9 Geographical zoology.
	→ 591.485 Organs of hearing. Ears		Zoogeography
.5	Organs of equilibrium (balance). Statocysts. Statoliths	.524	Special adaptations of animal species to territory (organizational adaptations)
.9	Lateral organs. Lateral line		Aquatic animals
.489	Spinal ganglia [cancelled] → 591.482.4		Further particulars may be denoted by Table 1(e) Common auxiliaries of place, e.g.
591.49	SOMATOLOGY. SHAPE OF THE ANIMAL BODY	.1	591.524.1 (26) Marine (saltwater) animals
.491	Personae corporum. Zooids. Proglottides		(26.05) Animals of lagoons, haffs, salt ponds, salt pans
.1	Giants, giant forms		(28) Freshwater animals
.2	Dwarfs, dwarf forms		(289) Brackish-water animals
.492	Antimeres (actinomerer). Parameres.		
	Metamerer (meromes). Bodily symmetry		
.1	Antimeres (actinomerer). Parameres	.11	Benthos
.2	Metamerer (meromes). Segments	.111	Sessile benthos
.3	Body axis and planes of symmetry	.112	Vagile (mobile) benthos
.31	Anaxial	.12	Plankton
.32	Homoaxial	.13	Nekton
.33	Monaxial	.15	Still-water, slack-water animals
.34	Disymmetric	.16	Bank-dwelling (riparian), shore-dwelling (littoral) animals. Tidal, waterline animals.
.35	Bilateral		Rheophile animals
.36	Asymmetric	.2	Land-dwelling (terrestrial) animals
.493	Head	.21	Terrestrial animals confined to land (dry-land animals)
.494	Cephalothorax. Neck	.22	Terrestrial animals with swimming ability
.495	Thorax. Chest	.23	Terrestrial animals with flying ability
.496	Abdomen. Hindquarters		
.497	Tail		

- 591.525 **Special adaptations of individual animals to changes in conditions of life (regulatory adaptation)**
- .526 **Population density of an animal species. Reproduction rate (breeding rate, birth rate). Destruction rate (mortality rate, death rate)**
- 591.53 **NUTRITION. ANIMAL NUTRIENTS, FOODSTUFFS**
- Special auxiliary subdivisions for 591.53**
- 591.53.063 Dietary changes
- .1 Principal diet
- .2 Occasional diet
- .3 Emergency diet (consumed with difficulty)
- .5 Regular, periodic dietary change
- .7 Difference of diet in young and elderly stages
- .8 Difference of diet between the sexes
- Principal divisions (continued)**
- 591.531 **Classification of animals according to dietary preference**
→ 591.13 Nutrition. Inanition
For parasitism, synoeketism etc. → 591.557
- .1 Plant eaters in general (herbivores, phytophages)
- .11 Phyllophages, caulophages, rhizophages. Leaf, stem and root miners (borers)
- .12 Wood eaters (xylophages). Wood borers (xylodytes)
- .125 Gallery borers
- .13 Juice (sap) suckers (chymophages)
- .14 Flower (blossom) visitors (anthophilous animals)
- .15 Fruit eaters (carpophages)
- .16 Fungus rearers
- .19 Other specialized plant eaters
- .2 Animal (flesh) eaters in general (carnivores, sarcophages). Predators
- .211 Bloodsuckers (haematophages)
- .212 Temporary parasites
- .213 Ectoparasites
- .214 Endoparasites
- .22/.29 According to prey
591.531.22/.29 ≅ 592/599, e.g.
591.531.257 Insect eaters (insectivores)
- .3 Animal-and-plant eaters (omnivores, pantophages)
- .31 Plankton eaters
- .4 Animals with peculiar diets
- .41 Sand eaters. Mud eaters
- .42 Dust eaters. Mould eaters. Humus eaters (humiphages)
- .43 Carrion, corpse eaters (necrophages)
- .44 Dung, faeces eaters (coprophages). Eaters of rot, putrid matter (saprophages)
- .45 Stone borers (lithodytes)
- .46 Hair eaters. Feather eaters
- .49 Other animals with peculiar diets
- .5 Holophytic animals. Nutrition with the help of chlorophyll
- .532 **Classification of animals according to diversity of diet**
- .1 Polyphages (diverse feeders)
- .2 Oligophages (selective feeders)
- .3 Monophages (specialized feeders)
- .536 **Assembly of food stores, larders. Food hoarders**
- .538 **Nutritional requirements according to mode of life**
- 591.54 **CLIMATIC CONDITIONS. SEASONS**
→ 551.506.8 Phenology. Plants and animals regarded as meteorological indicators
551.586 Biometeorology. Bioclimatology
- .541 **Water**
- .542 **Light. Cave animals (cavernicoles). Demersal (deep-sea) animals. Diurnal and nocturnal animals. Sleep**
→ 591.9(24) Underground, e.g. cave, fauna
- 591.543 **Climate**
- .1 Temperature. Cold-weather (cryophilic) animals. Warm-weather (thermophilic) animals
- .2 Atmospheric humidity
- .3 Atmospheric disturbance, air movement. Protective response through relinquishing of flight power
- .4 Alternation of climatic conditions. Seasons
→ 591.151.1 Seasonal polymorphism
- .41 Dormant germs. Dormant eggs. Encysting
- .42 Aestivation (estivation). Hibernation. Condition of latent life
- .43 Regular (seasonal) migration. Bird migration. Migration to spawning grounds
- .544 **Cosmic influences. Sun. Moon. Cosmic radiation**
- .545 **Seasons and reproduction. Spawning season. Heat, rut, mating season**
- 591.55 **COMMUNAL LIFE. ANIMAL SOCIETIES**
- .551 **Relations between the sexes. Pairing (cohabitation) of sexes. Devices for location and recognition of the sexes (by each other). Rut. Fighting among males, sparring. Courtship rituals**
→ 591.464.62 Fighting organs
591.464.63 Organs for detecting females
591.58 Communication and expression by sound or ultrasonic vibrations, mime, or other signals, smell, touch or chemical sense
For wanderings at puberty [cancelled] - 591.543.43
- .552 **Relations between members of a species. Gregarious formations (herds, flocks). Colonies. Associations, e.g.**
591.552:595.799 Bee colonies
Division of labour
- .553 **Biocoenoses (animal communities)**
Kind of animal may be denoted by the hyphen auxiliaries described under 59-2/-9, e.g.
591.553-412.1 Oyster beds (from 594.121)
Further particulars may be denoted by Table 1(e) Common auxiliaries of place, e.g.
591.553-36(267.33) Coral formations in the Red Sea
(-36 from 593.6)
- .5 The biocoenotic balance and disturbances in it
→ 591.526 Population density of an animal species
- .554 **Animal fighting beyond the degree necessary for the provision of food**
- .555/.556 **Animal sociology**
591.555/.556 ≅ 301.15/16
Sources and motives of sociological phenomena in animals
Social relationships in animals
- .556 **Relations between individuals of different species. Commensalism, synoeketism.**
- .557 **Parasitism. Symbiosis**
→ 591.69 Parasites
- .2 Relations with humans
- .22 Relations of individual animals with humans
- .23 Relations of animal groups with humans
- .6 Symbiosis (living together with mutual advantage)
- .61 Between animal and plants or bacteria. Zoochlorella. Zooxanthella. Photogenic bacteria
- .66 Between animal and animal
- .7 Commensalism (living together with one-sided advantage, but without damage to the host). Synoeketes
- .71 Epoecketes (living on another organism)
- .72 Paroecketes (living alongside another organism)
- .73 Entoecketes (living inside another organism)
- .8 Parasitism (obtaining food at the expense of the host animal or plant)
- .81 Process and circumstances of transmission. Heteroeckism (change of host). Intermediate host
- .82 Capsule formation. Pearls
- .83 Damage to the host. Parasitic castration
- .84 Killing of the host

- 591.56 PROVISION FOR POSTERITY. CARE OF THE YOUNG, BROOD CARE
- .561 Passive brood care
 - .562 Active brood care in general
 - .563 Nest building. Egg-cocoons. Insect structures
 - .564 Conveying of eggs and embryos (larvae) to feeding grounds
 - .565 Lodging of eggs and embryos in or on the body of the parent animal
 - .566 Skin folds. Pouches. Marsupium (in marsupial mammals)
 - .567 Viviparity
 - .2 Ovoviviparity
 - .568 Care and feeding of the young
- 591.57 DEFENCE. ATTACK
- .571 **Behaviour when in danger**
 - .1 Flight reflex. Rapidity of movement. Change of direction in flight. Crooked course. Zigzagging
 - .2 Feigning death (playing possum). Hiding, concealment (lying doggo). Pupal cocoons. Building of hide-outs
 - For nests as dwellings* → 591.521
 - For nests as brood care* → 591.563
 - .572 **Protective adaptations of the body**
 - .1 Shells and armour of body (endogenous) materials. Spines. Quills. Storage of skeletal elements in the body
 - .2 Shells and armour of non-body (exogenous) materials
 - .3 Protection against injury from invaded (penetrated) foreign bodies
 - .4 Mucus and wax secretion
 - .5 Stinging capsules. Poisonous spines. Irritant hairs. Poisonous juice, venom. Repellent fluids. Sepia. Offensive taste or smell
 - Particular animals may be denoted by colon combination, and anatomical aspects by* —147.74 (from 591.477.4; → instruction at 59—1), e.g. 591.572.5:595.799—147.74 Bee stings (as defence mechanism) and anatomy of stings
 - .6 Production of alarm calls, warning signals
 - .7 Warning and deterrent colours and markings
 - .8 Protective imitation. Mimicry. Adaptive coloration
 - .573 **Autotomy as defence mechanism**
 - .574 **Cleanliness**
 - .576 **Protective colouring. Camouflage**
 - .1 Resorting to area with compatible (matching) background
 - .2 Adaptation of colour to background by pigmentary change
 - .577 **Weapons for attack (offence)**
 - Particular animals may be denoted by colon combination, and physiological aspects by* —117.51 (from 591.175.1; → instruction at 59—1), e.g. 591.577:597.554.2—117.51 Shock organ of the electric eel, and its electric components
- 591.58 COMMUNICATION AND EXPRESSION BY SOUND OR ULTRASONIC VIBRATIONS, MIME OR OTHER SIGNALS, SMELL, TOUCH OR CHEMICAL SENSE (CHEMORECEPTION)
- .582 Acoustic
 - .2 By sounds. Song. Croaks. Animal speech. Calls. Stridulation. Purring
 - .4 By ultrasonic vibrations
 - .584 Through visual signals and movements, e.g. mime. Fleering, grimacing, baring of teeth
 - .586 Through contact or touch, e.g. feelers, antennae

591.6

ECONOMIC ZOOLOGY. APPLIED ZOOLOGY

- 636 Animal breeding in general. Livestock rearing etc.
- 638 Keeping, breeding and management of insects and other arthropods
- 639 Hunting. Fishing. Fish breeding
- Protection from economic factors may be denoted by colon combination with* 502.747, e.g. 591.611:502.747 Protection from extermination by hunting etc.

591.61

UTILITY OF ANIMALS

- Hunting and capture of animals
- Training in captivity (breaking in). Domestication
- Breeding. Rearing
- Protection and care of animals. Winter-feeding
 - 351.765 Protection of useful animals. Extermination of harmful animals — Public administration
- Deliberate use of animals by humans to combat other animals
 - Further particulars may be denoted by colon combination with, firstly, the number for the useful animal, and, secondly, the number for the harmful animal, e.g.* 591.617:595.433:595.754.1 Use of Phalangidae spiders (harvestmen, daddy-longlegs) to control Gymnocerata (bugs)
- Deliberate use of animals by humans to control plants
 - Further particulars may be denoted by colon combination as at 591.617*
- Diseases and pests of useful and harmful animals

.618

.619

591.65

HARMFUL ANIMALS

591.67

DISEASE-SPREADING ANIMALS

591.68

ANIMALS THAT DAMAGE INANIMATE THINGS

591.69

PARASITES

- 576.89 Animal parasitology (*where optional systematic arrangement may be made*)
- Parasites may be classed according to their host, by adding the hyphen auxiliary denoting the host (→ instruction at 59—2/—9) and then the hyphen auxiliary for the parasite, e.g.*
 - 972.3 Horses (from 599.723)
 - 513 Nematode worms (thread-worms) (from 595.13)
- hence:* 591.69—972.3—513 Parasites of the horse: Nematodes
- similarly* 591.69—57 Parasites of insects (from 595.7)
 - 82 Parasites of birds (from 598.2)
 - 9 Parasites of mammals (from 599)
 - 932 Parasites of rodents (from 599.32)
 - 99 Parasites of humans (from 599.9)

591.8

ANIMAL HISTOLOGY

- The histology of a particular organ may be denoted by colon combination with the subdivisions of 591.4, e.g.* 591.8:591.477 Histology of the skin

591.81	HISTOLOGY OF THE CELL → 576.3 General cytology 591.463.1 Sperm. Spermatogenesis 591.465.12 Oogenesis (ovum formation)	591.9	GEOGRAPHIC ZOOLOGY. ZOOGEOGRAPHY. FAUNA. GEOGRAPHIC DISTRIBUTION OF ANIMALS → 551.7.022.2 Biozonation — Stratigraphy 551.8.07 Palaeobiogeographic distribution of life 574.91 Migration. Change of habitat 591.523 Single migrations <i>Typical zones of distribution, and faunas, may be denoted by Table I(e) Common auxiliaries of place (see also the notes at 581.9), e.g.</i> 591.9(100.2) Cosmopolitan distribution (210.5) Littoral distribution (210.7) Insular distribution. Island fauna (211) Polar fauna (23.03) High-mountain fauna (23.075) Snow-zone fauna (24) Underground, e.g. cave, fauna. Cf. 591.542 (252) Desert fauna (252.51) Steppe fauna (253) Forest, jungle fauna (254) Fauna of arable land (26) Marine fauna (26.05) Lagoon, salt-pond fauna (28) Inland-water, freshwater fauna (28):553.7 In springs :556.3 In groundwater (289) Brackish-water fauna (4—015) Fauna of the Mediterranean region (6—013) Fauna of the Ethiopian region (7—013) Fauna of the Nearctic region (8—011) Neotropical region (9—011) Australian region (9—012) Australo-Malay region
.811	Protoplasm		Means of distribution
.813	Nucleus, Linin. Nuclein. Chromosomes		Active means
.815	Cell division		Passive means
.816	Centrosome		Obstacles to distribution
.818	Cell membrane. Cilia. Flagella		Significance of antecedents in distribution
591.82	HISTOLOGY OF THE CONNECTIVE TISSUE		Faunal relicts
.821	Cellular connective tissue		Human interference with fauna
.822	Gelatinous tissue		Spreading, propagation of animals
.823	Fibrous connective tissue		Extinction of animals
.824	Adenoid (lymphoid) tissue		
.826	Adipose tissue		
591.83	HISTOLOGY OF CARTILAGE (CHONDRUS)		
591.84	HISTOLOGY OF BONE (OSSEOUS) TISSUE		
591.85	HISTOLOGY OF BLOOD AND LYMPH. CHROMATOPHORES		
591.86	HISTOLOGY OF MUSCULAR TISSUE (MYOPLASM)		
.861	Plain (smooth) muscle fibres	.91	
.862	Striated muscle fibres	.911	
.863	Fibrils	.912	
.864	Sarcoplasm	.92	
.865	Myoblasts	.93	
591.87	HISTOLOGY OF THE EPITHELIUM	.94	
.871	Cortical tissue	.95	
.872	Sensory cells	.951	
.873	Ciliary epithelium	.952	
.874	Glandular epithelium		
.875	Resorptive epithelium		
.876	Pigmentary epithelium		
591.88	HISTOLOGY OF NERVE TISSUE. NERVE CELLS. NERVE FIBRES		
.881	True nerve cells. Neurones		
.882	Nerve fibres (axones)		
.883	Dendrites		
.884	Neurofibrils		
.885	Nerve sheaths (neurilemmas). Schwann cells. Medullary sheath		