

Henderson's
Dictionary of
BIOLOGICAL
TERMS

EIGHTH
EDITION

John H. Kenneth

A DICTIONARY OF BIOLOGICAL TERMS

PRONUNCIATION, DERIVATION, AND DEFINITION OF
TERMS IN BIOLOGY, BOTANY, ZOOLOGY, ANATOMY,
CYTOLOGY, GENETICS, EMBRYOLOGY, PHYSIOLOGY

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OLIVER AND BOYD

EDINBURGH: TWEEDDALE COURT

LONDON: 39A WELBECK STREET, W. 1

1963

Originally published under the title
A Dictionary of Scientific Terms in the issues :

FIRST EDITION . . .	1920
SECOND EDITION . . .	1929
THIRD EDITION . . .	1939
FOURTH EDITION . . .	1949
FIFTH EDITION . . .	1953
SIXTH EDITION . . .	1957
SEVENTH EDITION . . .	1960

A Dictionary of Biological Terms
EIGHTH EDITION . . . 1963

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PRINTED IN GREAT BRITAIN BY
OLIVER AND BOYD LTD., EDINBURGH

PREFACE

MATTER selected for treatment in the first and second editions of *A Dictionary of Scientific Terms* by the late Dr and Mrs W. D. Henderson, and in subsequent editions by the present Editor, includes terms in biology, botany, and zoology, together with anatomy, physiology, cytology, genetics, embryology, and some terms in other cognate subjects. On revision and amplification of this work, *A Dictionary of Biological Terms* is deemed to be a more appropriate and acceptable title.

References to the sources of terms or of additional meanings cannot be included in a volume of moderate size. Specific generic, ordinal, and other taxonomic names of plants and animals are likewise necessarily omitted.

The method of spelling is in the main that used in Britain, but due attention is paid to American orthography, by means of cross-references or by reproducing in the original lettering terms culled from scientific literature published in the United States. Spelling, however, is not static, as may be illustrated by the tendency to substitute *e* for the diphthongs *ae* and *oe*, and by compound words which may be written as two separate words, or hyphenated, or integrated as one word.

In the statement of derivation of terms, Greek and Russian words have been transliterated, as science and medical students are seldom acquainted with those languages. On the advice of one authority on Greek, the transliteration of certain combinations of letters represents the sound rather than the exact letters of the original, hence the occurrence of such words as *brangchia*, *hydōr*, etc.

Quite apart from natural differences in Scottish, English, and American utterance, pronunciation is subject to different fashions in different centres of learning. Moreover, the accepted position of the accent also varies in different localities and from one generation to another. The phonetic spelling following each term, therefore, should be regarded as a general indication of pronunciation.

The text has been revised, and many terms, both old and new, definitions, and cross-references have been added.

The total number of terms, inevitably subject to limitation of time, now approximates sixteen thousand five hundred.

Cordial thanks are due to the Publishers for their generous co-operation in maintaining the facility of reference afforded by resetting the work, and in effecting various typographical improvements.

Criticisms and suggestions proffered by many individuals are likewise gratefully appreciated.

The preparation of this Dictionary would have been impracticable without the aid of the staff of various libraries in Scotland and England. Particularly, it is essential to express thanks to the County Librarian and staff of the Argyll County Library for their unfailing assistance.

J. H. K.

1963

EQUIVALENTS

- One acre = 4840 square yards = 4046·873 square metres
- One Ångström unit = 0·0001 micron
- One are = 119·6033 square yards = 0·02471 acre
- One atmosphere = 14·72 pounds per square inch = 1033·3 grams per square centimetre = 1·0132 bar
- One bar = pressure of mercury column of 29·53 inches, one square centimetre in area, at 0° C, latitude 45° at sea-level
- One British thermal unit = 251·99 calories
- One bushel (Imperial) = 36·3677 litres
- One bushel (U.S.A.) = 35·2383 litres
- One centigram = 0·15432 grain
- One centimetre = 0·39370 inch
- One chain = 22 yards = 20·1168 metres
- One cubic centimetre = 0·061 cubic inch
- One cubic foot = 0·0283 cubic metre
- One cubic inch = 16·387 cubic centimetres
- One cubic metre = 1·308 cubic yards
- One degree centigrade = 0·8 degrees Réaumur = 1·8 degrees Fahrenheit
- One degree Fahrenheit = 0·5556 Centigrade
- One degree of latitude at the equator = 68·704 statute miles
- One degree of longitude at the equator = 69·65 statute miles
- One degree Réaumur = 1·25 degrees Centigrade
- One drachm = 60 grains = 3·88793 grams
- One fathom = 6 feet = 1·828767 metres
- One fluid drachm = 3·5515 millilitres
- One fluid drachm (U.S.A.) = 3·6969 millilitres
- One fluid ounce = 28·4123 millilitres
- One fluid ounce (U.S.A.) = 29·573 millilitres
- One fluid scruple = 1·1838 millilitres
- One foot = 12 inches = 30·4801 centimetres
- One furlong = 10 chains = 201·168 metres
- One gallon (Imperial) = 1·201 gallons (U.S.A.) = 4·54596 litres
- One gallon (U.S.A.) = 0·8327 gallon (Imperial) = 3·785 litres
- One grain = 0·0647989 gram
- One gram = 0·035274 ounce = 15·432356 grains
- One gram-calorie = 0·003968 British thermal units
- One hectare = 2·47106 acres
- One hundredweight = 112 pounds = 50·80 kilograms
- One inch = 2·53995 centimetres
- One inch (U.S.A.) = 2·54001 centimetres
- One kilogram = 2·20462 pounds (avoirdupois)
- One kilogram per square centimetre = 14·223 pounds per square inch
- One kilometre = 0·62137 statute mile
- One litre = 1·76077 pint (Imperial) = 2·133 pints (U.S.A.)
- One metre = 3·28084 feet = 39·37011 inches
- One microgram = 0·001 milligram = 0·00015 grain
- One micron = 0·001 millimetre = 0·000039 inch

One mil = 0.001 inch
 One mile (nautical) = 1.152 statute miles = 1.8532 kilometres
 One mile (statute) = 8 furlongs = 1.6093 kilometres
 One millibar = 0.001 bar
 One milligram = 0.015432 grain
 One millilitre = 0.001 litre = 0.0352 fluid ounce
 One millimetre = 0.03937 inch
 One millimicron = 0.000001 millimetre
 One minim (British) = 0.961 minim (U.S.A.) = 0.05919 cubic centimetre
 One minim (U.S.A.) = 1.041 minim (British) = 0.06161 cubic centimetre
 One ounce (apothecaries) = 8 drachms = 31.10347 grams
 One ounce (avoirdupois) = 437.5 grains = 28.34954 grams
 One ounce (troy) = 31.10347 grams
 One pennyweight = 1.555 grams
 One pint (Imperial) = 568.2454 cubic centimetres
 One pound (avoirdupois) = 16 ounces = 453.59243 grams
 One pound (troy) = 5760 grains = 373.24 grams
 One pound per square inch = 70.308 grams per square centimetre
 One quart (Imperial) = 1.201 quart (U.S.A.) = 1.13649 litre
 One quart (U.S.A.) = 0.8327 quart (Imperial) = 0.94636 litre
 One quintal = 100 kilograms = 220.4621 pounds
 One rood = 40 poles = 10.1168 ares
 One scruple = 20 grains = 1.29598 grams
 One square centimetre = 0.15498 square inch
 One square foot = 929.034 square centimetres
 One square inch = 6.4516 square centimetres
 One square kilometre = 0.3861 square mile
 One square metre = 1.550 square inches
 One square mile = 640 acres = 2.58998 square kilometres
 One square millimetre = 0.00155 square inch
 One square yard = 0.8361 square metre
 One stere = 35.3156 cubic feet
 One stone = 14 pounds (avoirdupois) = 6.3503 kilograms
 One yard = 0.9144 metre

Sound velocity (air), mean = 331.7 metres per second

Zero, absolute = 0° K. = -459.4° F. = -273.16° C. = -218.4° R.

Zero, centigrade and Réaumur = +32° F.

Zero, Fahrenheit = -17.78° C.

ABBREVIATIONS

A . . . androecium	At . . . astatine
A . . . argon	atm. . . atmosphere, atmospheric
a. . . anode	at. no. . . atomic number
a. . . anterior	ATP . . . adenosine triphosphate
a. . . abundant (occurrence of species)	at. wt. . . atomic weight
a. . . adjective	Å.U. . . Ångström unit(s)
Å . . . Ångström unit(s)	Au . . . gold
AA . . . adenylic acid	A-V . . . atrioventricular
aapm. . . amphipomict	av. . . average
A.C., a.c. . . alternating current	Az . . . azote (nitrogen)
Ac . . . actinium	B . . . boron
ACTH . . . adrenocorticotrophic hormone	B. . . <i>Bacillus</i>
ADH . . . antidiuretic hormone	b. . . bicuspid
ADP . . . adenosine diphosphate	Ba . . . barium
adv. . . adverb	Bact.; bact. . . Bacterium; bacterial
act. . . (<i>aetatis</i>) age(d)	bar. . . barometric
Ag . . . silver	Bé. . . Baumé
ala. . . alanine	Be . . . beryllium
alt. . . alternate	Bi . . . bismuth
alt. . . altitude	B.I. . . buffer index
Al . . . aluminium	biol. . . biological; biology
Am . . . americium	Bk . . . berkelium
Am . . . ammonium	B.M.R. . . basal metabolic rate
AMP. . . acid mucopolysaccharides	B.N.A. . . Basle Nomina Anatomica
AMP. . . adenosine monophosphate	B.O.D. . . biochemical oxygen demand
amp. . . ampère(s)	bot. . . botanical, botany
amph. . . amphimict	B.P. . . blood pressure
An . . . actinon	B.P. . . British Pharmacopoeia
an. . . anode	b.p. . . boiling point
anal. . . analysis	B.R. . . (British) Birmingham revision of B.N.A.
anat. . . anatomical; anatomy	Br . . . bromine
a.n.s. . . autonomic nervous system	B.T.U. . . British thermal unit
ant. . . anterior	C . . . carbon
APH . . . anterior pituitary hormone	C. . . centigrade; Celsius
APL . . . anterior-pituitary-like hormone	C . . . (<i>centum</i>) hundred; century
apm. . . apomict	C . . . cervical spinal nerve
appl. . . applied to	C . . . corolla
aq. . . water; aqueous	C ¹⁴ . . . radioactive carbon
Ar. . . Arabic	c. . . canine tooth
Ar . . . argon	c. . . (<i>circa</i>) approximately
arg. . . arginine	c . . . curie(s)
A.S. . . Anglo-Saxon	C.A. . . chronological age
As . . . arsenic	Ca . . . calcium
asp. . . aspartic acid	ca. . . cathode

<i>ca.</i> . . .	(<i>circa</i>) approximately	DCA . . .	desoxycorticosterone acetate
Cal. . .	large calorie(s)	deg. . .	degree(s)
cal. . .	small calorie(s)	dg. . .	decigram(s)
c.c. . .	cubic centimetre(s)	diam. . .	diameter
Cd . . .	cadmium	dil. . .	dilute
Ce . . .	cerium	<i>dim.</i> . .	diminutive
Cel. . .	Celsius	DL . . .	difference limen
cel. . .	cellulose	D : N . .	dextrose : nitrogen ratio
cent. . .	hundred ; centigrade	DNA . .	deoxyribonucleic acid
c.e.s. . .	central excitatory state	DNP . .	dinitrophenyl
chem. . .	chemical ; chemistry	DOC . .	desoxycorticosterone
CF . . .	citrovorum factor	DOPA . .	dihydroxyphenylalanine
Cf . . .	californium	doz. . .	dozen
<i>cf.</i> . . .	(<i>confer</i>) compare	DPN . .	diphosphopyridine nucleotide
cg., cgm. .	centigram(s)	dr. . .	drachm(s), dram(s)
c.g.s. . .	centimetre-gram-second	Dut. . .	Dutch
c.i.s. . .	central inhibitory state	dwt. . .	pennyweight
Cl . . .	chlorine	Dy . . .	dysprosium
c.l. . .	corpus luteum	E . . .	east
cm. . .	centimetre(s)	<i>e</i> . . .	2.71828
Cm . . .	curium	E.D. . .	effective dose
c.mm. . .	cubic millimetre(s)	EEG . .	electroencephalogram
cm/s . . .	centimetres per second	eff. . .	efferens, efferent
C : N . . .	carbohydrate : nitrogen ratio	<i>e.g.</i> . .	(<i>exempli gratia</i>) for example
c.n.s. . .	central nervous system	E _h . . .	oxidation-reduction potential
CO . . .	cardiac output	embr. . .	embryological, embryology
Co . . .	cobalt	E.M.F. .	electromotive force
Co- . . .	coenzyme	E.M.F. .	erythrocyte-maturing factor
Co ⁶⁰ . .	radioactive cobalt	e.m.f. .	electromotive force
col., cols .	(bacterial) colony, colonies	end. . .	endosperm
conc. . .	concentrated ; concentration	entom. .	entomological ; entomology
conch. . .	conchology	eos. . .	eosinophil
c.o.v. . .	cross-over value	equiv. .	equivalent
CP . . .	creatine phosphate	Er . . .	erbium
cpd. . .	compound	ERG . .	electroretinogram
c.p. . .	candle-power	E.R.S. .	erythrocyte sedimentation rate
cpl. . .	carpel	Es . . .	einsteinium
c.p.s. . .	cycles per second	E.S.P. .	extrasensory perception
Cr . . .	chromium	esp. . .	especially
Cs . . .	caesium	est. . .	estimated, estimation
c.s.f. . .	cerebrospinal fluid	<i>et al.</i> . .	(<i>et alii</i>) and others
CU . . .	castrate's urine	η . . .	(<i>êta</i>) viscosity
Cu . . .	copper	Eu . . .	europium
cu., cub. .	cubic	F . . .	fluorine
cys. . .	cystine	F. . .	Fahrenheit
D . . .	deuterium	F. . .	French
d. . .	(<i>dexter</i>), right		
<i>d.</i> . .	dextrorotary		
<i>d.</i> . .	dominant (<i>appl.</i> species)		
Dan. . .	Danish		
db. . .	decibel(s)		
D.C., d.c.	direct current		

ABBREVIATIONS

xi

F ₁ , F ₂ , etc.	1st, 2nd, etc. filial generation	H ³	tritium
f.	female	HA	hyaluronic acid
f.	frequent (occurrence of species)	Hb	haemoglobin
FAD	flavin-adenine-dinucleotide	He	helium
F.D.	focal distance	HEP	high energy phosphate
Fe	iron	herb.	herbarium
Fe ⁵⁹	radioactive iron	Hf	hafnium
flr(s)	flower(s)	h-f.	high-frequency
fm	fathom	Hg	mercury
Fm	fermium	hg.	hectogram(s)
FMN	flavin mononucleotide	Hgb	hæmoglobin
f.p.	freezing point	HGF	hyperglycaemic-glycogenolytic factor (glucagon)
Fr	francium	his.	histidine
FSH	follicle-stimulating hormone	Ho	holmium
ft.	foot; feet	hor.	horizontal
fth.	fathom	hr, hrs	hour, hours
fur.	furlong	HT	hydroxytryptamine
G	gravitation constant	H.W.	High Water
G	gynoecium	hyb.	hybrid
g.	gram(s)	hypoth.	hypothetical
Ga	gallium	I.	incisor
gal.	gallon(s)	I	iodine
γ	(gamma) microgram(s)	I ¹³¹	radioactive iodine
Gd	gadolinium	i.	incisor (deciduous)
GDH	growth and development hormone	IAA	β-indolyl acetic acid
Ge	germanium	ib., ibid.	(<i>ibidem</i>) in the same place
gen.	genus	Icel.	Icelandic
geog.	geographical; geography	ichth.	ichthyology
geol.	geological; geology	ICSH	interstitial cell-stimulating hormone
Ger.	German	i.e.	(<i>id est</i>) that is
GH	growth hormone	ileu.	isoleucine
Gk.	Greek	in.	inch(es)
glu.	glutamic acid	In	indium
gly.	glycine	inf.	inferior
gm.	gram(s)	infl.	inflorescence
g.-mol.	gram-molecule	i.g.	(<i>idem quod</i>) the same as
G.M.T.	Greenwich Mean Time	Ir	iridium
G : N	glucose : nitrogen ratio	irid.	iridescent
gp.	group	It.	Italian
gr.	grain(s); gram(s)	I.U.	international unit(s)
gr. n.	Gram-negative	I.W.	isotopic weight
gr. p.	Gram-positive	JH	juvenile hormone
GSH	glutathione	J.N.D.	just noticeable difference
gt.; gtt.	(<i>gutta</i>) drop; (<i>guttae</i>) drops	K	calyx
H	hydrogen	K	potassium
H°	hydrogen ion concentration	k	constant
H ²	deuterium	ka.	kathode
		KC	kilocycles
		kg.	kilogram(s)
		km.	kilometre(s)

Kr . . .	krypton	min. . .	minimum
λ . . .	(<i>lambda</i>) wave length	min. . .	minute(s)
L. . .	Latin	M.I.O. . .	minimum identifiable odour
L. . .	ligament(um)	Mg . . .	magnesium
L., Linn. . .	Linnaean, Linnaeus	mg., mgm. . .	milligram(s)
L . . .	lumbar spinal nerve	ml. . .	millilitre(s) ; c.c.
l. . .	left	MLD . . .	minimum lethal dose
l. . .	litre	mm. . .	millimetre(s)
l. . .	laevorotary	m μ . . .	millimicron
La . . .	lanthanum	Mn . . .	manganese
Lam. . .	Lamarck	Mo . . .	molybdenum
lat. . .	latitude	mo. . .	month
lb. . .	pound (weight)	mol. . .	gram-molecule
LD . . .	lethal dose	mol. wt. . .	molecular weight
leu. . .	leucine	m.p. . .	melting point
l.f. . .	low frequency	m.p.h. . .	miles per hour
l.g.b. . .	lateral geniculate body	m.p.s. . .	metres per second
LH . . .	luteinising hormone	mr. . .	milliroentgen
Li . . .	lithium	mrad . . .	millirad(s)
liq. . .	liquid ; liquor	msec. . .	millisecond ; σ
L.L. . .	Late Latin	MSH . . .	melanocyte-stimulating hormone
log. . .	logarithm	m.s.l. . .	mean sea-level
long. . .	longitude	MT . . .	metric ton
l.p. . .	low pressure	M. U. . .	mouse unit
LS . . .	liminal sensitivity	μ . . .	(<i>mu</i>) micron
L.S. . .	longitudinal section	μ c . . .	microcurie(s)
l.t. . .	low tension	μ g . . .	microgram(s)
LTH . . .	luteotrophic hormone	μ l . . .	microlitre(s)
LTPP . . .	lipothiamide pyrophosphate	μ mm . . .	micromillimetre(s)
Lu . . .	lutetium	μ μ c . . .	micromicrocurie(s)
L.W. . .	Low Water	μ μ g . . .	micromicrogram(s)
lys. . .	lysine	μ μ . . .	micromicron (0.001 m μ)
M. . .	Membrana, Musculus	Mv . . .	mendelevium
M . . .	(<i>mille</i>) thousand	mV . . .	millivolt(s)
M . . .	molecular weight	m.v. . .	mean variation
m. . .	male	m.w. . .	molecular weight
m. . .	mean	myc. . .	mycology
m. . .	metre(s)	N . . .	nitrogen
m. . .	mile(s)	N . . .	normal solution
m. . .	minim(s)	N . . .	north
m. . .	minute(s)	n. . .	nasal
m. . .	molar	n. . .	(<i>nervus</i>) nerve
m. . .	(<i>musculus</i>) muscle	n. . .	neutral ; normal
m- . .	meta-	n . . .	haploid number of chromosomes
ma. . .	milliampère	2n . . .	diploid number
Mal. . .	Malaysian	n. . .	refractive index
max. . .	maximum	n. . .	noun
mb. . .	millibar(s)	Na . . .	sodium
mc. . .	millicurie(s)	Na ²⁴ . . .	radioactive sodium
Md . . .	mendelevium	N.A.P . . .	Nomina Anatomica, Paris
mdn. . .	median	Nb . . .	niobium
M.E. . .	Middle English	Nd . . .	neodymium
micr. . .	microscopic		

Ne . . .	neon	per. . .	perennial
n.g. . .	new genus	perp. . .	perpendicular
Ni . . .	nickel	<i>pert.</i> . .	pertaining to
No., no. . .	number	PGA . . .	pteroylglutamic acid
No . . .	nobelium	PGAL . . .	phosphoglyceraldehyde
norm. . .	normal	P.G.R. . .	psychogalvanic reflex
Np . . .	neptunium	<i>pH</i> . . .	hydrogen ion concentra- tion
n.p. . .	normal pressure	phe. . .	phenylalanine
NPN . . .	non-protein nitrogen	phys. . .	physics
N.S. . .	not significant	physiol. . .	physiology
n.sp. . .	new species	P.I. . .	Pharmacopoeia Inter- nationalis
NTP . . .	normal temperature and pressure	π . . .	(<i>pi</i>) 3·14159265
O . . .	oxygen	pigm. . .	pigment
O ₃ . . .	ozone	Pl. . .	plasma, Plasmodium
o- . . .	ortho-	<i>plu.</i> . .	plural
o. . . .	occasional (occurrence of species)	Pm . . .	promethium
obl. . .	oblique, oblong	pm. . .	premolar
O.F. . .	Old French	P-M-C . . .	pollen mother-cell
O.H.G. . .	Old High German	PMS . . .	pregnant mare's serum
Ω . . .	(<i>Omega</i>) ohm(s)	P μ E . . .	precipitation: evaporation ratio
<i>opp.</i> . .	as opposed to; opposite	PNA . . .	pentose nucleic acid
opt. . .	optical	Po . . .	polonium
opt. . .	optimal	POF . . .	pyruvate oxidation factor
org. . .	organic	pois. . .	poisonous
orig. . .	original	pop. . .	population
orn., ornith. . .	ornithology	pot. . .	potential
O.R.S. . .	Old Red Sandstone	P-P . . .	pellagra-preventing
Os . . .	osmium	p.p. . .	post partum
O.T. . .	old terminology	ppg. . .	precipitating
ov. . .	ovary	p.p.m. . .	parts per million
Oz . . .	ozone	ppt. . .	precipitate
oz. . .	ounce(s)	Pr . . .	praseodymium
P . . .	perianth	pro. . .	proline
P . . .	phosphorus	p.sol. . .	partly soluble
P. . .	premolar	Pt . . .	platinum
P . . .	probability	pt. . .	pint
P ³² . . .	radioactive phosphorus	pt. . .	point
p. . .	posterior	P.U. . .	pregnancy urine
p- . .	para-	p.u. . .	plant unit(s)
p.a. . .	per annum	Pu . . .	plutonium
Pa . . .	protactinium	pulv. . .	(<i>pulvis</i>) powder
PABA . . .	para-aminobenzoic acid	Q . . .	quartile deviation
pal. . .	palaeontology	Q ₁ . . .	temperature coefficient
P ₁ , P ₂ , etc. . .	1st, 2nd, etc., parental generation	quad. . .	quadrilateral
PATH . . .	pituitary adrenotrophic hormone	ql . . .	quintal
path. . .	pathology	qr. . .	quarter
Pb . . .	lead	qt. . .	quantity
PBI . . .	protein-bound iodine	qt. . .	quart
Pd . . .	palladium	<i>q.v.</i> . . .	(<i>quod vide</i>) which see
Pe . . .	probable error	R. . .	Réaumur
		R . . .	electrical resistance

R	response	sl.	slightly
R	rough (bacterial colony)	Sm	samarium
r.	right	sm.	small
r.	Roentgen unit(s)	S-M-C	sperm or spore mother-cell
<i>r</i>	correlation coefficient	Sn	tin
<i>r.</i>	rare (<i>appl.</i> species)	sol.	soluble; solution
Ra	radium	Sp.	Spanish
rad.	radius	sp., spp.	species
rad.	radix	sp. gr.	specific gravity
Rb	rubidium	sq.	square
rbc	red blood-cells	Sr	strontium
RBE	relative biological effective- ness	s.s.	<i>sensu stricto</i>
RE	radium emanation	sta.	stamen(s)
Re	rhenium	sta.	station
rect.	rectangular	std.	standard
refl.	reflex	STH	somatotrophic hormone
reg.	regular	S.T.P.	standard temperature and pressure
RES	reticulo-endothelial system	sup.	superior
ret.	retarded	Sw.	Swedish
Rh	rhesus factor	sym.	symmetrical
Rh	rhodium	<i>syn.</i>	synonym
rh	anti Rh agglutinin	syst.	system
R.I.	refractive index	syst.	systole
Rn	radon	T	temperature
RNA	ribonucleic acid	T	tension
rot.	rotation; rotating	T	thoracic spinal nerve
R.Q.	respiratory quotient	T	tritium
RT	reaction time	T.A.	toxin-antitoxin
R.U.	rat unit(s)	Ta	tantalum
Ru	ruthenium	Tb	terbium
Russ.	Russian	T _b , t _b	body temperature
S	sacral spinal nerve	Tc	technetium
S	smooth (bacterial colony)	t°	temperature
S	south	T.D.P.	thermal death-point
S	stimulus	Te	tellurium
S	sulphur	temp.	temperature
S ³⁵	radioactive sulphur	tert.	tertiary
s.	(<i>sinister</i>), left	t.g.	type genus
S-A	sinu-atrial	Th	thorium
Sb	antimony	thre.	threonine
Sc	scandium	Ti	titanium
S.D.	standard deviation	Tl	thallium
S.D.A.	specific dynamic action	Tm	thulium
Se	selenium	TNA	total nucleic acid content
sec.	second, secondary	tot.	total
ser.	serine	TPN	triphosphopyridine nucleotide
s.g.	specific gravity	trop.	tropical
Σ	(<i>Sigma</i>) sum of	try.	tryptophane
σ	(<i>sigma</i>) 0.001 second; msec.	TSH	thyroid-stimulating hormone
σ	(<i>sigma</i>) standard deviation	TSP	thyroid-stimulating hor- mone of prepituitary
Si	silicon		
sin.	sinus		
sing.	singular		

ABBREVIATIONS

xv

TTH . . .	thyrotropic hormone	V.F. . .	visual field
tyr. . .	tyrosine	vic. . .	vicinal
U. . .	unit(s)	visc. . .	viscous
U . . .	uranium	vol. . .	volume
UDP . . .	uridine diphosphate	v.s. . .	(<i>vide supra</i>) see above
uns. . .	unsymmetrical	vs. . .	versus
U.S.P. . .	United States Pharmacopoeia	W . . .	west
U.V. ; u-v	ultra-violet	W . . .	(<i>wolfram</i>) tungsten
V . . .	vanadium	W . . .	watt(s)
V. . .	vibrio	wbc . .	white blood-cells
V. . .	vision	wh. . .	white
v . . .	vision	wk(s). .	week(s)
v. . .	volt(s)	w.l. . .	wave length, λ
v . . .	velocity	wt. . .	weight
v. . .	verb	x . . .	haploid generation
val. . .	valine	2x . . .	diploid generation
var. . .	variable, variety	Xe . . .	xenon
ven. . .	vena, vein	Y . . .	yttrium
Vert. . .	Vertebrata	Yb . . .	ytterbium
vert. . .	vertebra, vertebrate	yd(s). .	yard(s)
vert. . .	vertical	yr(s). .	year(s)
ves. . .	vesica, vesicle	Zn . . .	zinc
vet. . .	veterinary	zool. . .	zoological ; zoology
		Zr . . .	zirconium

SOUND-SYMBOLS USED IN PRONUNCIATION

The sound-symbols have been made as simple as possible, only the broader differences in vowel-sounds being included. The phonetic spelling following each term represents a general indication of the prevailing varieties of pronunciation rather than a critically exact reproduction.

ā	<i>as in</i>	rate	ō	<i>as in</i>	no
ă	„	rat	ö	„	not
â	„	far	ô	„	form
ch	„	church	oi	„	anatomy
ē	„	he	oi	„	toy
ĕ	„	hen	oo	„	good
ĕ	„	her	ow	„	cow
g	„	go	s	„	moss
gw	„	guano	sh	„	fish
ī	„	pine	th	„	thin
ī	„	pin	ū	„	pure
j	„	gem	ū	„	nut
k	„	cat	y	„	yard
kw	„	queen	z	„	maize
ng	„	sing	zh	„	vision

A DICTIONARY OF BIOLOGICAL TERMS

abactinal (äbäk'tinäl, äbäkti'näl) *a.* [L. *ab*, from; Gk. *aktis*, ray.]

Appl. area of echinoderm body without tube-feet and in which madreporite is usually included; abambulacral, antambulacral.

abambulacral (äb'ämbülä'kräl) *a.* [L. *ab*, from; *ambulare*, to walk.] Abactinal, *q.v.*

abapical (äbäp'ikäl) *a.* [L. *ab*, from; *apex*, summit.] *Pert.* or situated at lower pole.

abaxial (äbäk'siäl) *a.* [L. *ab*, from; *axis*, axle.] *Pert.* that surface of any structure which is remote or turned away from the axis; ex-centric. *Opp.* adaxial.

abaxile (äbäk'sil) *a.* [L. *ab*, from; *axis*, axle.] *Appl.* embryo whose axis has not the same direction as axis of seed.

abbreviated (äbrë'viätëd) *a.* [L. *ad*, to; *brevis*, short.] Shortened; curtailed.

abcauline (äbköl'in) *a.* [L. *ab*, from; *caulis*, stalk.] Outwards from or not close to the stem, *opp.* adcauline.

abdomen (äbdö'mën) *n.* [L. *abdomen*, belly.] The belly; in vertebrates, part of body containing digestive organs; in Arthropoda and certain Polychaeta, posterior part of body; in Synascidia, part of zooid below thorax.

abdominal (äbdöm'inäl) *a.* [L. *abdomen*, belly.] *Pert.* abdomen; *appl.* structures, organs, or parts of organs situated in, on, or closely related to, the abdomen.

abdominal pores,—single or paired openings leading from coelom to exterior, in cyclostomes and certain fishes.

abdominal reflex,—contraction of abdominal wall muscles when skin over side of abdomen is stimulated.

abdominal regions,—nine areas into which the abdomen is divided by two horizontal and two vertical imaginary lines: hypochondriac (2), lumbar (2), inguinal (2), epigastric, umbilical, hypogastric.

abdominal ribs,—ossifications occurring in fibrous tissue between skin and muscles of certain reptiles.

abdominal ring,—one of two openings in fasciae of abdominal muscles through which passes spermatic cord in male, round ligament in female; inguinal ring.

abducens (äbdü'senz) *n.* [L. *abducere*, to lead away.] The sixth cranial nerve, supplying the rectus externus muscle of the eyeball.

abduct (äbdükt') *v.* [L. *abductus*, led away.] To draw away from median axis.

abduction (äbdük'shön) *n.* [L. *abducere*, to lead away.] Movement away from the median axis, *opp.* adduction.

abductor (äbdük'tör) *n.* [L. *abductus*, led away.] A muscle that draws a limb or part outwards.

aberrant (äbër'änt) *a.* [L. *aberrare*, to stray.] With characteristics not in accordance with type; *appl.* species, etc.

abhymenial (äbhimë'nial) *a.* [L. *ab*, from; Gk. *hymën*, membrane.] On or *pert.* the side of the lamella opposite that of the hymenium in agarics.

abience (äb'iëns) *n.* [L. *abire*, to depart.] Retraction from stimulus; avoiding reaction. *Opp.* adience.

abient (äb'iënt) *a.* [L. *abire*, to depart.] Avoiding the source of stimulation. *Opp.* adient.

- abiogenesis** (ābīōjēn'ēsis) *n.* [Gk. *a*, not; *bios*, life; *genesis*, birth.] The production of living from non-living matter; spontaneous generation. *Opp.* biogenesis.
- abiology** (ābīōl'ōjī) *n.* [Gk. *a*, not; *bios*, life; *logos*, discourse.] The study of non-living things.
- abiotrophy** (ābīōt'rōfī) *n.* [Gk. *a*, not; *bios*, life; *trophē*, maintenance.] Differential vitality or longevity of cells or tissues.
- abjection** (ābjēk'shūn) *n.* [L. *abjicere*, to cast away.] The shedding of spores, as from sporophores.
- abjunction** (ābjūngk'shūn) *n.* [L. *abjungere*, to unyoke.] The delimitation of spores by septa at tip of hypha.
- ablactation** (āb'lāktā'shūn) *n.* [L. *ab*, from; *lactare*, to give milk.] Cessation of milk secretion; weaning.
- abomasum** (ābōmā'sūm) *n.* [L. *ab*, from; *omasum*, paunch.] The reed or fourth chamber of stomach of ruminants.
- abospore** (ābō'ōspōr) *n.* [L. *ab*, from; Gk. *ōon*, egg; *sporos*, seed.] A spore developed from an unfertilised female gamete or oosphere; azygospore, parthenospore.
- aboral** (ābō'rāl) *a.* [L. *ab*, from; *os*, *oris*, mouth.] Away from, or opposite to, the mouth.
- abortion** (ābōr'shūn) *n.* [L. *abortus*, premature birth.] Premature birth; arrest of development of an organ.
- abbranchiate** (ābrāng'kiāt) *a.* [Gk. *a*, without; *branchia*, gills.] Without gills.
- abrupt** (ābrūpt') *a.* [L. *abruptere*, to break off.] Appearing as if broken, or cut off, at extremity.
- abruptly - acuminate**, — having a broad extremity from which a point arises, *appl.* leaf.
- abruptly-pinnate**, — having the main axis of epipodium not winged, but bearing a number of secondary axes which are winged.
- abscise** (ābsīz') *v.* [L. *abscidere*, to cut off.] To become separated; to fall off, as leaves, fruit, etc.
- absciss** (āb'sīs) *a.* [L. *abscindere*, to cut off.] *Appl.* layer of meristematic cells just outside cork-layer, to whom fall of leaves, floral parts, fruits, and certain branches is due; abscissile.
- abscission** (ābsīsh'ūn) *n.* [L. *abscindere*, to cut off.] The separation of parts.
- absorption** (ābsōrp'shūn) *n.* [L. *absorbere*, to suck in.] Intussusception of fluid by living cells or tissues; passage of nutritive material through living cells; of light when neither reflected nor transmitted.
- abstriction** (ābstrik'shūn) *n.* [L. *abstringere*, to cut off.] The process of detaching spores or conidia by rounding off of tips of sporophores, as in mildews; abjunction and abscission.
- abterminal** (ābtēr'mīnāl) *a.* [L. *ab*, from; *terminus*, limit.] Going from the end inwards.
- abyssal** (ābis'āl) *a.* [Gk. *abyssos*, unfathomed.] *Pert.* depths of ocean; *appl.* organisms or material usually found there; abysmal.
- abyssobenthic** (ābis'ōbēn'thīk) *a.* [Gk. *abyssos*, unfathomed; *benthos*, depths of sea.] *Pert.*, or found on, bottom of ocean at depths exceeding ca. 1000 metres.
- abyssopelagic** (ābis'ōpēlāj'ik) *a.* [Gk. *abyssos*, unfathomed; *pelagos*, sea.] *Pert.*, or inhabiting, the ocean at depths exceeding ca. 1000 metres, i.e., below the bathypelagic zone.
- acanaceous** (ākānā'sēūs) *a.* [Gk. *akanos*, thistle.] Prickly; bearing prickles, as leaves.
- acantha** (ākān'thā) *n.* [Gk. *akantha*, thorn.] Prickle; spinous process.
- acanthaceous** (ākānthā'sēūs) *a.* [Gk. *akantha*, thorn.] Bearing thorns or prickles.
- acanthin** (ākān'thīn) *n.* [Gk. *akantha*, thorn.] Substance forming skeleton of some Radiolaria.
- acanthion** (ākān'thīōn) *n.* [Gk. *akanthion*, small thorn.] The most prominent point on the anterior nasal spine.