

## Index

*Italic page numbers denote figures.*

- acetylcholine, 116, 148  
 ACTH (adrenocortico-  
 trophic hormone),  
 94, 117, 118, 161  
 activity, dopaminergic, 113  
 addax, (*Addax  
 nasomaculatus*), 37,  
 165  
 adrenal gland, 93–4, 123  
 adrenaline, 116, 117  
 adrenocorticotrophic  
 hormone (ACTH),  
 94, 117, 118, 161  
 aggression and social  
 isolation of animals,  
 21, 22  
*agouti* locus, 13, 14, 17,  
 19, 122, 145, 172  
*albino* locus, 15  
 albinos, 129  
*Alces alces* (elk or moose),  
 165–6  
 allele, 13, 15  
*Abyssinian*, 20  
*agouti*, 15, 172  
*albino*, 122  
*chinchilla*, 15  
 colour, 32  
*dilution*, 17, 19  
 eumelanin-reducing, 19  
*non-agouti*, 13, 14, 15,  
 17, 19, 122, 172  
*orange*, 18  
*piebald*, 122  
*silver*, 17  
*uniformity*, 173  
*white dilution*, 172  
*white-spotting*, 17, 18,  
 134  
 wild-type, 15  
 allometric changes, 26  
 allometric exponent, 106  
 allometry  
 negative, 24  
 positive, 24  
 allometry formula, 106  
*Alopex lagopus* (arctic  
 fox), 50  
 alpaca, 60–1, 62, 109, 132,  
 142  
 amines, biogenic, 116  
*Ammotragus lervia*  
 (Barbary sheep),  
 167–8  
 amphetamine, 117, 118  
 angoras, 22  
 animal  
 behavioural differences,  
 91–2  
 coat colour, and  
 distribution, 134–5  
 comparisons of sensory  
 organs and brain,  
 103–14  
 domestic  
 appearance, 187  
 behaviour, 187  
 benefits to man, 3–11  
 as companion, 10  
 crossbreeding, 30  
 as cult object, 11,  
 132–4  
 definition and  
 examples, 1  
 increasing diversity of,  
 21–2  
 and medicine, 6  
 object of wealth, 10,  
 11  
 origins of, 35–80  
 products of, 6–7  
 return to wild, 156–7  
 size differences, 23–5  
 social functions, 9–10  
 uses of, 8–10  
 domestication of large,  
 190  
 draught, 8  
 hoofed, and transport,  
 7–8  
 odd-coloured, and social  
 isolation and  
 aggression, 21, 22,  
 131  
 path of development, 98  
 prey, colour matching  
 of, 20  
 as providers of clothing,  
 4–6  
 transport of, by man,  
 35–6, 180  
 colour adaptation, 20–1  
 colour deviation,  
 19–20  
 as target, 20–1  
*see also* horse, pig,  
 sheep etc.  
 animal appearance,  
 diversity of, 13–34  
 animal fats, uses of, 6  
 animal products, 3–7  
 animal size and weight, in  
 overstocked  
 conditions, 99  
 anoa (*Bubalus  
 depressicornis*), 64  
 Apis bull, 11  
 archipallium, 104  
 ascorbic acid, 147  
 ass  
*Atlas* wild, 55  
 brain size of, 108  
 domestic, 54, 55  
 feral, 86  
*Nubian* wild, 54  
 origin of, 54–5  
*Somalian* wild, 55  
 wild (*Equus africanus*),  
 36, 54  
 association (integration)  
 centres, 105  
 atrophy, of instinctual  
 behaviour, 81  
 aurochs (urus) (*Bos  
 primigenius*), 27,  
 64, 65, 66, 68, 186  
 crossbreeding in, 31  
 skull braincase of, 110  
 banteng (*Bos javanicus*),  
 64, 65, 66, 67, 68,  
 143  
 beefalo (cattelo or  
 American breed),  
 68  
 behaviour  
 alleles which alter, 175  
 changes in, 81–92  
 disappearance of  
 particular, 187  
 behaviour and coat colour,  
 121–30

- behavioural deviations,  
 classification of,  
 81–3
- behavioural differences,  
 between wild and  
 domestic animals,  
 81–92
- behavioural  
 synchronization, 175
- billygoat, 74; *see also* goat
- bison  
 Canadian wood (*Bison  
 bison athabascae*), 64  
 coat colour, 132  
 European (wisent)  
 (*Bison bonasus*), 64  
 North American plains  
 (*Bison bison bison*),  
 64  
*Bison bison athabascae*  
 (Canadian wood  
 bison), 64  
*Bison bison bison* (North  
 American plains  
 bison), 64  
*Bison bonasus*, (European  
 bison) (wisent), 64  
*black (intensity) locus*, 17  
*black locus*, 19, 173  
 blood, uses of, 6  
 boar, Indian wild (*Sus  
 scrofa cristatus*), 55,  
 57; *see also* pig
- bobcat, (*Felis (Lynx)  
 rufus*), 49
- bones, uses of, 7
- Bos gaurus* (gaur), 64, 67,  
 68
- Bos grunniens*, 186
- Bos javanicus* (banteng),  
 64, 65, 66, 67, 68,  
 143
- Bos mutus* (yak), 64, 67,  
 68
- Bos primigenius* (aurochs  
 or urus), 27, 64, 65,  
 66, 68, 186
- Bos sauveli* (kouprey), 65,  
 66
- Bos taurus*, 186
- brain  
 comparison of different  
 species, 105  
 fore-, evolutionary  
 development, 104
- brain in animals, 103–14
- breed  
 change of appearance,  
 29  
 multiplicity, 28–30  
 primitive, 30
- breeding  
 in overstocked  
 conditions, 99  
 reduction in, 162  
 bride-price, 10  
*Bubalus bubalis*, 186  
*Bubalus depressicornis*  
 (anoa), 64
- buffalo  
 African (*Syncerus  
 caffer*), 64  
 Asian water (*Bubalus  
 arnee*), 64  
 water, 68, 143
- bulls, fattening, 152, 153;  
*see also* cattle
- calf, 'golden', 11
- calf-raising, in pens, 152
- camel  
 Bactrian (two-humped),  
 59, 141  
 brain size of, 109  
 dromedary (single-  
 humped), 59, 141  
 New World, 60–3  
 colour, 132  
 Old World, origin of,  
 59–60  
 wild (*Camelus ferus*), 59  
*Camelus bactrianus*, 186  
*Camelus dromedarius*, 186  
*Camelus ferus* (wild  
 camel), 59, 141  
*Camelus thomasi*, 59
- Canis*, brain evolution in,  
 43
- Canis adustus* (jackal), 38,  
 43
- Canis aureus* (jackal), 38
- Canis familiaris*, 186
- Canis latrans* (coyote), 38,  
 43
- Canis lupus*, 38, 42, 186
- Canis lupus arabs*  
 (southern wolf), 38,  
 42, 43
- Canis lupus chanco*  
 (Central Asian  
 wolf), 39
- Canis lupus pallipes*  
 (southern wolf), 38,  
 39, 42, 43
- Canis mesomelas* (jackal),  
 38, 43
- Canis rufus* (red wolf), 38
- Canis simensis* (jackal), 38
- Capra hircus*, 186
- Capra ibex aegagrus*  
 (bezoar goat), 28,  
 71, 72, 73, 74, 89,  
 110
- Capra ibex falconeri*  
 (markhor or screw-  
 horn goat), 71, 72, 73
- Capra ibex ibex* (ibex  
 goat), 71, 73
- Capreolus capreolus* (roe  
 deer), 170
- capybara (*Hydrochoerus  
 hydrochaeris*), 167
- carnassial tooth, 38, 40, 41
- castration, as physiological  
 taming, 155–7
- cat  
 African wild (*Felis  
 silvestris lybica*), 20,  
 43, 44, 47  
 angora, 29  
 Asian wild (*Felis  
 silvestris ornata*), 43  
 black, 133, 135–6  
 and magic, 11  
 black-footed (*Felis  
 nigripes*), 44  
 brain size of, 108  
 chinchilla-coloured, 15  
 Chinese desert (*Felis  
 bieti*), 44  
 coat colour, 135–7  
 coat colour and  
 behaviour, 128  
 coat pattern in, 138  
 domestic  
 prey-catching, 81–2  
 striped tabby, 47  
 Egyptian Mau, spotted  
 pattern, 18, 47  
 European, 18  
*non-agouti* allele in,  
 136  
 European wild (*Felis  
 silvestris*), 32, 45  
 gestation period, 48–9  
 hairless, 23  
 jungle (*Felis chaus*), 44  
 Madagascan domestic,  
 137  
 Maine coon, 23, 49  
 Norwegian forest, 23  
 origin of, 45–9  
 Pallas' (*Felis  
 (Otocolobus)  
 manul*), 48, 49  
 Persian, 26, 29  
 sand (*Felis margarita*),  
 44, 49  
 Siamese, 17, 32  
 social compatibility in,  
 82  
 Turkish van, 23  
 white-spotting in, 137  
 wild, and socialization,  
 96  
 wild/domestic pair, 85  
 catecholamine, 116, 121,  
 189  
 catecholamine synthesis,  
 117, 128
- cattelo (beefalo or  
 American breed), 68

## Index

203

- cattle  
 Bali, 66, 67, 143  
 black, 132–3  
 Black Forest, 143  
 brachyceros (shorthorn), 27  
 Chillingham Park, 110, 133  
 domestic, changes in size, 100–1  
 fattening of, 4, 152–3  
 herds of feral, 157  
 Hungarian steppe, 27  
 husbandry conditions, 148  
 Madura, 67  
 origin of, 64–8  
 primigenius (longhorn), 27  
 white sacrificial, 132  
 white-spotting allele in, 134  
 wild/domestic pair, 87  
 zebu, 66  
*Cavia aperea*, 77  
*Cavia porcellus*, 186  
 cephalization constant, 106  
*Cervus elaphus* (red deer), 168, 169  
*Cervus nippon* (Sika deer), 168  
*Cervus timorensis* (rusa or Timor deer), 36, 168  
*Cervus unicorn* (sambar), 170  
 cheetah, 37  
 chinchilla allele, in rabbits, 15  
 chinchilla (*Chinchilla laniger*), 77  
 chlordiazepoxide, and *Sigmodon hispidus*, 118–20  
 cholinesterase, 148  
 clothing, from animals, 4–6  
 coat colour, 13–22, 189  
 and behaviour, 121–30  
 and distribution, 134–5  
 in special improved breeds, 146  
 selection, 131–46  
 white spotting, 18  
 colour matching, of prey animals, 20  
 commensalism, 178, 179, 181  
 and domestication, 178–9  
 companion, domestic animal as, 10  
 conditions, for domestication of animals, 37, 79–80  
 confinement, and stress, 149  
 conspecific, crossbreeding with, 30  
 constant  
 cephalization, 106  
 specific integration, 106  
 coronoid process, 40 41  
 cortex, surface area and folding of, 106  
 corticosteroids, 94, 147, 156, 162  
 counterselection, 180  
 cow, Alpine, 27  
 cows, in lying boxes, 153  
 coyote (*Canis latrans*), 43  
 coypu (nutria) (*Myocastor coypus*), 77  
*Cricetulus griseus* (Chinese dwarf hamster), 78  
*Cricetus cricetus* (European common hamster), 93  
 crossbreeding, 29, 30, 31–2, 43, 48, 58, 60, 63, 67–8, 142  
 controlled by humans, 31  
 multiple in cattle, 67  
 cult worship, and colour, 133–4  
*Dama dama* (fallow deer), 168–76  
 deer  
 fallow (*Dama dama*), 168–76  
 Mesopotamian fallow, 170–1  
 North American white-tailed (*Odocoileus virginianus*), 170  
 Père David's (*Elaphurus davidianus*), 168  
 red (*Cervus elaphus*), 168, 169, 180; Scottish, 176  
 roe (*Capreolus capreolus*), 170  
 rusa (Timor) (*Cervus timorensis*), 36, 168  
 Sika (*Cervus nippon*), 168  
 Timor (rusa) (*Cervus timorensis*), 36, 168  
 white red, 162  
 depolarizations, 116  
 diencephalon, 104  
 dilution allele, 17, 19  
 dilution locus, 17  
 dingo, 3, 6, 32, 33, 42, 84  
 albino, 128  
 behaviour and colour, 125  
 colouring, 16  
 and wolf, 84  
 diversity, intraspecific, 30  
 dog  
 Australian feral (dingo), 3, 6, 32, 33, 42, 84  
 brain size of, 107–8  
 comparison between breeds, 84, 107  
 dalmation-setter  
 crossbreed, 84  
 as drug detector, 8  
 English spotting in, 129  
 Greenland sled, 33, 84  
 hairless, 23  
 Hallstrom, 32, 33  
 intelligence tests in, 111–13  
 komondor, 133  
 kuvasz, 133  
 leg length, 26  
 lop-ears in, 24  
 Madagascan, 42, 134  
 Maremmano-Abruzzese, 133  
 origin of, 32, 38–44  
 poi, 33, 34  
 primitive, 134, 135  
 Pyrenean mountain, 133  
 Saint Bernard, changes by breeding, 29  
 Siberian husky, 84  
 sloughi, 26  
 social organization in, 83–4  
 special performance and brain size, 113  
 as status symbol, 10  
 Tatra, 133  
 white, 133  
 Yorkshire terrier, 26  
 dolphin, albino, and social aggression, 21, 22  
 domestication  
 conditions necessary for, 77, 79–80  
 dates of origin for, 78–9  
 and evolution, 178–86  
 first principle of, 96  
 of large animals, 190  
 new, 161–77  
 primary, 31, 35, 67–8  
 principles of, 161  
 and regressive evolution, 181–3  
 second principle of, 113  
 secondary, 31, 35, 68  
 and taming, 159–60  
 third principle of, 130  
 donkey  
 albino, 127  
 brain size of, 108  
 Catalanian, 139  
 colour in, 138, 139, 140  
 Egyptian–Arabian, 139

- dopa (3,4-dihydroxy-phenylalanine), 116, 121
- dopamine, 116, 117, 121
- dopaminergic activity, 113
- dopaquinone, 121
- dromedary, 59, 141
- drugs, psychoactive, 116, 188
- dung, as fuel, 6
- Dusicyon australis* (Falkland Island wolf), 44
- ear, lop-, 23, 25, 103
- ecological isolation, 183–4, 191
- eland (*Taurotragus oryx*), 164, 165
- Elaphurus davidianus* (Père David's deer), 168
- elephant, 37  
white, 132
- elk (moose) (*Alces alces*), 165–6
- endurance, in domestic animals, 147–54
- eosinophil granulocytes, 149
- Equus africanus* (wild ass), 54
- Equus asinus*, 54–5, 86, 97, 138–9, 186
- Equus caballus*, 186
- Equus ferus przewalskii* (Przewalski horse), 51–2, 53, 86, 137
- Equus ferus* (wild horse), 50–1, 186
- Equus hemionus* (onager), 36
- Equus hipponigrus* *quagga* (Burchell zebra), 86, 163, 164
- eumelanin, 13, 15
- eumelanin-reducing allele, 19
- evolution and domestication, 178–86  
regressive, 191  
domestication as, 181, 182–3
- Falkland Island wolf (*Dusicyon australis*), 44
- Felis bieti* (Chinese desert cat), 44
- Felis catus*, 18, 45–9, 81–2, 85, 105, 108, 154, 156, 186
- Felis chaus* (jungle cat), 44
- Felis (Lynx) rufus* (bobcat), 49
- Felis (Otocolobus) manul* (Pallas' cat), 48, 49
- Felis margarita* (sand cat), 44, 49
- Felis nigripes* (black-footed cat), 44
- Felis silvestris* (European wild cat), 32, 45, 108, 186
- Felis silvestris lybica* (African wild cat), 20, 43, 44, 47, 108
- Felis silvestris ornata* (Asian wild cat), 43
- Felis* sp., auditory bullae in, 104
- ferret  
albino, 137  
brain size of, 108  
origins of, 49–50
- ferret/polecat pair, 86
- fight and flight syndrome (acute stress component), 94, 117
- follicle-stimulating hormone (FSH), 94
- formula, allometry, 106
- fox  
aggression in, 129  
arctic (*Alopex lagopus*), 50  
avoidance distance, 123  
breeding to resemble dog, 161–2  
colour types, 122–4  
quantitative determinations, 122–3  
red (*Vulpes vulpes*), 50  
weight and colouring, 123
- FSH (follicle-stimulating hormone), 94
- fuel, from dung, 6
- gaur (*Bos gaurus*), 64, 67, 68
- gayal (mithan), 67
- geese, guarding in, 8
- gene frequencies, shift in, 30
- gene pool, 178, 180  
changing by cross-breeding, 31
- genetic diversity, and mutations, 22
- genetic drift, 30, 31, 178
- genetic unit, 30–1
- gerbil (*Meriones unguiculatus*, *M. shawi*), 78
- glucocorticoids, 94
- goat, 130  
African dwarf, 73, 89, 126  
angora, 23  
bezoar (*Capra ibex aegagrus*), 28, 71, 72, 73, 74, 89, 110  
brain size of, 110  
Chiltan, 74, 110  
colour in, 143, 145  
horn shape, 27–8  
horns, 73–4  
ibex (*Capra ibex ibex*), 71, 73  
Madagascan, 144  
markhor or screw-horn (*Capra ibex falconeri*), 71, 72, 89  
origin of, 71–4  
Valais, 143  
wild, distribution of, 71  
wild/domestic pair, 89–90
- goshawk, and pigeons, 21
- granulocytes, eosinophil, 149
- greyhound, 26, 107
- guanaco (*Lama guanikoe*) 60, 61, 62, 141, 142
- guanacollama pair, 60–2, 87
- guinea pig, 77, 144, 186  
brain size of, 110  
hair of, 23  
wild (*Cavia aperea*), 77  
wild/domestic pair, 90–1
- hair  
guard, 23  
types of, 22–3, 24
- hair colour, and behaviour, 121–30
- hamster  
Chinese dwarf (*Cricetulus griseus*), 78  
European common (*Cricetus cricetus*), 93  
golden, 76–7, 144
- hart, white, 133
- hashish (marijuana), 118
- hemione, 36
- herds, as wealth indicators, 10–11
- heterozygous state, 17
- hog, pygmy (*Sus salvanus*), 57
- homozygous state, 17
- hormones  
adrenocorticotrophic (ACTH), 94, 117, 118, 161

## Index

205

- hormones (*contd*)  
 follicle-stimulating (FSH), 94  
 luteinizing (LH), 94  
 thyroid-stimulating (TSH), 94, 95
- horn, shape, 27–8
- horse  
 Arab, 26  
 brain size of, 108  
 colour in, 133–4, 137–8  
 colouring and  
 behaviour, 121–2, 127–8  
 domestication, 52–3  
 Haflinger, 52  
 herds of feral, 157  
 origins of domestication, 2, 50–3  
 origins of, 50–3  
 Palomino, 133  
 piebald colouring in, 139  
 Przewalski (*Equus ferus przewalskii*), 51–2, 53, 86, 137  
 in stalls, 153  
 thoroughbred and brain size, 113  
 white, 133, 138  
 wild (*Equus ferus*), 50–1, 186  
 wild/domestic pair, 86  
 husbandry conditions, 148–54
- Hydrochoerus hydrochaeris* (capybara), 167
- hyena, 37
- hyperpolarizations, 116
- hypertrophy, of instinctual behaviour, 81–2
- hypothalamus, 94
- ibex 37, 89  
 Abyssinian, 73  
 Alpine, 72, 89–90  
 Caucasian (tur), 72, 89  
 Nubian, 73  
 Spanish, 72  
*see also* goat
- immunological studies, 40–1
- impulse frequency, 116
- incisors, in camels, 61–2
- indolamines (5-hydroxytryptamine), 116
- infantile schema, of Konrad Lorenz, 25–6
- information, acquisition and processing of, 103–14
- information processing, transmitter substances for, 115–20
- information-processing system, 157, 188
- integration (association) centres, 105
- interbreeding, limited, 185
- isolation  
 ecological, 183–4, 191  
 social, 183, 184, 191  
 structural, 183, 184, 191  
 temporal, 183, 191
- isolation mechanisms, 183
- jackal (*Canis adustus*, *C. aureus*, *C. mesomelas*), 43
- jaw  
 of pig, 57, 58  
 of wolf, 40, 41
- konik (horse), 51, 52, 53, 138
- kouprey (*Bos sauveli*), 65, 66
- Lama glama* (llama), 60–3, 132, 141, 142, 186
- Lama guanikoe* (guanaco), 60, 61, 62, 141, 142
- Lama pacos*, 60–3, 142, 186
- Lama vicugna* (vicuna), 60, 61, 62, 142
- lamb, as symbol of Christianity, 11; *see also* sheep
- lemur, Madagascan ring-tailed, 20, 21
- leopard, coat colour and behaviour, 128
- leopard cat (*Prionailurus bengalensis*), 48
- LH (luteinizing hormone), 94
- Librium (chlordiazepoxide), 118–20
- llama (*Lama glama*), 60, 61, 62, 132, 141, 142, 186
- loci  
*agouti*, 13, 17, 19, 122, 172  
 and hair banding, 14  
*albino*, 15  
*black*, 17, 19, 173  
*dilution*, 17  
*pattern*, 18  
*white-spotting*, 17, 18
- longhorn cattle, 27
- Lorenz, Konrad  
 behavioural deviations in animals, 81  
 infantile schema, 25–6  
 luteinizing hormone (LH), 94
- man  
 and animal transport, 35–7, 179–80  
 influence on stock size, 99
- management, wildlife, 180
- markhor (*Capra ibex falconeri*), 71, 72, 89; *see also* goat
- meat production, 3
- medical research, and domestic animals, 9
- medicine, and domestic animals, 6
- melanin, synthesis of, 117, 128
- melanism (black colouring), 20
- membrane, postsynaptic, 116
- menil colour, 178
- Meriones unguiculatus*, *M. shawi* (gerbil), 78
- Merkwelt (perceptual world), viii, 92
- Mesocricetus auratus* (Syrian hamster), 76, 144
- Microtus arvalis* (field vole), 100, 163
- milk, production, 4, 5, 164–5
- mink, ranch (*Mustela vison*)  
 coat colour, 19, 122  
 origins of, 50
- Minotaur, 11
- mithan (gayal), 67
- mongrel, of jackal and dog, 44
- mongrels, 29–30
- moose (elk) (*Alces alces*), 165–6
- moufflon, (*Ovis ammon musimon*), 69, 70, 88–9, 159
- mouse, 130  
 behaviour and colour, 125  
 house (*Mus musculus*), 75, 76  
 laboratory, 144  
 wild/domestic pair, 91
- Mus musculus* (house mouse), 75, 76
- Mustela eversmanni* (steppe polecat), 49

- Mustela furo*, 49–50, 186  
*Mustela putorius*  
 (European polecat), 49  
*Mustela vison* (American mink), 50  
 mutations, and genetic diversity, 22  
 muzzle, length of, 107  
*Myocastor coypus* (coypu or nutria), 77
- neocortex, 104, 105–6, 115  
 mammalian, 94  
 neopallium, 105  
 neurotransmitters, 115, 116, 118, 128  
*non-agouti* allele, 13, 14, 15, 17, 19, 122, 136, 172  
 noradrenaline, 116  
 nutria (coypu) (*Myocastor coypus*), 77
- Odocoileus virginianus*  
 (North American white-tailed deer), 170  
 onager (*Equus hemionus*), 36  
*orange* allele, 18  
 origins, of domestic animals, 35–80  
*Oryctolagus cuniculus*  
 (European wild rabbit), 75  
 oryx, 37, 165  
*Ovis ammon ammon*  
 (argali), 69  
*Ovis ammon musimon*  
 (mouflon), 69, 70, 88–9, 159  
*Ovis ammon vignei* (urial), 69  
*Ovis aries*, 69–71, 186  
*Ovis canadensis* (bighorn sheep), 70  
*Ovis dalli* (Dall sheep), 70  
*Ovis nivicola* (snow sheep), 70
- palaeopallium, 104  
 pallium, 104  
*pattern* locus, 18  
 phaeomelanin, 13, 15, 17  
 phenylalanine, 116, 121  
 phenylketonuria (PKU), 121  
 physiological taming, 155  
*piebald* allele, 122  
 pig  
 banded (*Sus scrofa vittatus*), 55, 56, 57  
 bearded (*Sus barbatus*), 57  
 belted colouring in, 140  
 black Polynesian, 140, 141  
 brain size of, 108–9  
 breeding, 29, 148–51  
 Chinese, 26, 58  
 chromosome number of, 59  
 crossbreeding, 31  
 Danish landrace, 139  
 fattening of, 4, 148–51  
 first in meat production, 2  
 German landrace, 139  
 husbandry conditions, 148–51  
 landrace, 29, 139  
 large white, 29  
 Middle Eastern wild, 57  
 origin of, 55–9  
 Papua, 58, 141  
 Polynesian, 56, 57, 140  
 pot-bellied, 25, 26  
 skull characteristics of, 58  
 Sulawesi warty, 58  
 vertebrae in, 26  
 Vietnamese pot-bellied, 25, 26  
 warty (*Sus celebensis*, *S. verrucosus*), 56, 57  
 wild (*Sus scrofa*), 55–9  
 wild/domestic pair, 86–7  
 Yorkshire, 139
- pig production, intensive, 149, 150, 151  
 pigeons, and goshawk, 21  
 pigmentation, and skin temperature, 16–17  
 pituitary gland, 94  
 PKU (phenylketonuria), 121
- polecat  
 European (*Mustela putorius*), 49  
 steppe (*Mustela eversmanni*), 49
- poodle, and northern wolf, 83–4  
 populations, regional, 30  
 postsynaptic membrane, 116  
 predator, and prey colour, 131–2  
 pre-mating-isolation, 183  
 presynaptic element, 115  
 principle of excitation transmission, 115  
*Prionailurus bengalensis*  
 (leopard cat), 48  
 psychoactive drugs, 116  
 psychogenic stress, 93–9, 188  
 psychogenic tolerance, 98–100, 152, 158, 166, 179, 181, 188  
 increased, concept of, 96  
 psychosocial stress, 93–9, 117, 149, 151, 166, 188
- rabbit, 128, 144–5  
 aggression in, 129  
 albino, 145  
 allele series of reduced pigmentation, 16  
 brain size of, 110  
 domestication in, 158–9  
 Dutch spotting, 145  
 English spotting, 145  
 European wild (*Oryctolagus cuniculus*), 75  
 learning speed and memory  
 performance in, 113  
 origin of, 75  
 Porto Santo, 157–8  
 wild/domestic pair, 90  
 race, primitive, of a species, 30–1  
 races (subspecies), 30  
*Rangifer tarandus*  
 (reindeer), 63–64, 87, 97, 109, 128, 142
- rat  
 aggression in, 129, 130  
 albino, 128  
 black (*Rattus rattus*), 124, 125, 126, 179  
 brain size of, 110  
 brown (*Rattus norvegicus*), 75, 76  
 cotton (*Sigmodon hispidus*), 78, 118–20  
 and problem-solving tests, 147–8  
 wild-domestic pair, 91  
 rat-baiting, 75–6  
*Rattus norvegicus* (brown rat), 75, 76  
*Rattus rattus* (black rat), 124, 126, 179  
 frequencies of behavioural intensities, 125  
 raw materials, and animals, 6  
 reindeer (*Rangifer tarandus*)  
 brain size of, 109  
 colours of, 128, 142

## Index

207

- reindeer (*contd*)  
 origin of, 63–4  
 wild, and physiological stress, 97  
 wild/domestic pair, 87  
 reproduction success, reduction in, 162  
 rodents  
 control, 9  
 origin of domestic 75–8 and stress, 93–4  
 ruminants, domestication of, 2–3  
 rusa (Timor deer) (*Cervus timorensis*), 36, 168  
 Saint Bernard, changes by breeding, 29  
 sambar (*Cervus unicolor*), 170  
 selection  
 artificial, 29, 99, 175–6, 178  
 coat colour, 131–46  
 semispecies, 185  
 sensory organs, 103–14  
 serum protein pattern, of dog, 38  
 sexual activity, 188  
 sheep  
 Barbary (*Ammotragus lervia*), 167–8  
 bighorn (*Ovis canadensis*), 70  
 black, 133  
 brain size of, 109–10  
 Dall (*Ovis dalli*), 70  
 German heath, 88, 125  
 hair, 23  
 Hungarian zackel, 27, 28, 88  
 Jacob, 28  
 moufflon (*Ovis ammon musimon*), 69, 70, 88–9, 159  
 moufflon/domestic pair, 88–9  
 origin of, 69–71  
 in pens, 152  
 snow (*Ovis nivicola*), 70  
 Soay, 70, 88, 143  
 return to wild, 157  
 social integration in, 88–9  
 Texel, 88  
 urial (*Ovis ammon vignei*), 69  
 variously coloured, 144  
 wool, 23  
 shorthorn cattle, 27  
*Sigmodon hispidus* (cotton rat), 78, 118, 119, 120  
 silver alleles, 17  
 size, changes in, 26  
 sloughi (Moroccan greyhound), 26  
 Soay sheep, 70, 88, 143, 157  
 social binding, in fallow deer (*Dama dama*), 175  
 social functions, of domestic animals, 9–10  
 social isolation, and aggression, 21, 22, 191  
 speciation  
 incipient, 186  
 natural, 185  
 separate, 185  
 species  
 origin of new, 182–3  
 primitive race of a, 30–1  
 wild, 185  
 species' survival capacity, 191  
 specific integration  
 constant, 106  
 squirrels, colouring of, 20  
 stochastic change, 178  
 stock management, 98–100  
 stress  
 in animals, 93–102, 147–52  
 and death in animals, 95  
 definition, 95  
 diminished, in domestic animals, 95  
 and gender, 156  
 physiological, 93  
 psychosocial, 93–9, 117, 149, 151, 166, 188  
 and rodents, 93–4  
 sites of, 94  
 stress axis, diagram, 94  
 stress component, acute (fight and flight syndrome), 94  
 stress components, chronic, 94  
 structural isolation, 183, 184, 191  
 subspecies, 30  
 summation  
 spatal, 116  
 temporal, 116  
 survival capacity, and temperature, 153–4  
*Sus barbatus* (bearded pig), 57  
*Sus celebensis* (warty pig), 56, 57, 58  
*Sus domesticus*, 55–9, 186  
*Sus salvanius* (pygmy hog), 57  
*Sus scrofa cristatus* (Indian wild boar), 55, 57, 58  
*Sus scrofa scrofa*, 55, 56  
*Sus scrofa vittatus* (banded pig), 55, 56, 57  
*Sus verrucosus* (warty pig), 57, 58  
 synaptic cleft, 115, 116  
 synaptic elements, 116  
 synchronization, behavioural, 175  
 syndrome  
 domestic behavioural, 161  
 fight and flight, 94, 117  
 tabby cat, 47, 49  
 Abyssinian, 18  
 blotched pattern in, 18, 135, 136, 137, 138  
 striped pattern in, 18, 135, 138  
*see also* cat  
 taming, 155–6, 190  
 and domestication, 159–60, 164–7  
 physiological, 155  
 tarpan (wild horse), 51–2, 53, 138  
*Taurotragus oryx* (eland), 164, 165  
 temperature, and survival capacity, 153–4  
 temporal isolation, 183, 191  
 temporal summation, 116  
 terrier, Yorkshire, 26; *see also* dog  
 thyroid-stimulating hormone (TSH), 94  
 thyroxine, synthesis of, 117  
 tolerance, psychogenic 98–100, 152, 158, 166, 179, 181, 188  
 tooth, carnassial, 38, 40, 41  
 tranquilizers, 118  
 TSH (thyroid-stimulating hormone), 94  
 tyrosine, 116, 121  
 tyrosine hydroxylase, 121  
 ungulates, and transport, 7–8  
 uniformity allele, 173  
 urial (*Ovis ammon vignei*), 69  
 urus (aurochs) (*Bos primigenius*), 27, 64, 65, 66, 68, 186

- vertebrate forebrain,  
 evolutionary  
 development, 104
- vicuna (*Lama vicugna*),  
 60, 61, 62, 142
- vole, field (*Microtus  
 arvalis*), 100, 163
- Vulpes vulpes* (red fox),  
 50, 123–4
- white dilution* allele, 172
- white-spotting* allele, 17,  
 18, 134, 142
- wild-type allele, 15
- wolf, 38  
 brain size of, 38–9, 43,  
 107  
 colouring, 16  
 and dingo, 84  
 distribution, 38  
 Falkland Island  
 (*Dusicyon  
 australis*), 44  
 intelligence tests in,  
 111–13  
 northern (*Canis lupus*),  
 38, 42, 186  
 and poodle, 83–4  
 as opportunistic feeder,  
 40  
 as origin of dog, 32, 33,  
 38–44  
 pad, 42–3  
 red (*Canis rufus*), 38  
 and socialization, 96  
 southern, brain size in,  
 39, 107  
 southern (*Canis lupus  
 arabs*, *C. l.  
 pallipes*), 38, 39, 41,  
 42–43, 96, 107  
 wolf/dog pair, 83–4  
 wool, 5
- yak (*Bos mutus*), 64, 66,  
 67, 68, 143
- yellow (intensity)* genes, 17
- Yorkshire terrier, 26
- zebra, Burchell (*Equus  
 (Hippotigris)  
 quagga*), 86, 127,  
 163, 164
- zebu, 23, 26, 65, 66, 142–3  
 diversity of colours in,  
 19