Index

Page numbers in italic denote figures, those in bold denote tables

AARDVARC acronym 748
abbreviated injury scale 1109
ABC toxins 52, 69
abdomen
diving accidents 436–7
external examination 143
internal examination 147
abdominal injuries
blunt force 279–80, 279–82
physical activity after 564–5
sharp force 321–2, 321, 322
abortion
illegal (criminal) 518–19, 519
causes of death 520–1
internally active agents 520
soapy abortion 519–20
legal 518
abortus imminens 518
abrasions 254, 258–9, 259,
260
elder abuse 764
finger nail scratches 259, 260
genitalia 687
healing 764
pressure/crushing 259–60
road traffic accidents 1112
tangential/brushing 258, 259
absorption 889, 892–4
factors affecting 893–4
P-glycoprotein transporter 893–4
intestinal first pass metabolism 893
pH value 893
abused substances see illegal drugs;
toxicology
accident proneness 1120–1
accidental death 63, 210
see also traffic accidents
accommodation
forensic DNA laboratories 38
forensic toxicological laboratories 40–1
accreditation 34–45
accumulated degree-days 114, 175
acetone 960
analysis of 903
blood levels 914
elimination half-life 912–13, 913
as marker of alcohol abuse 1102
respiratory toxicity and exposure threshold 962
acetylcysteine 849, 855
6-acetylmorphine
chemical structure 944
stability 875, 876
acetylsalicylic acid 584, 587
acid deaths 592
Aconitum napellus (monkshood) 963, 966
acrivastine, and driving fitness 1094, 1095
acrolein 460
actus rea (act/action) 204
acute coronary syndromes 601
acute death (minutes to hours) 222–5
acute haemolytic transfusion reaction 554
acute interstitial pneumonitis (AIP) 619
acute respiratory distress syndrome (ARDS) 617
ad hoc tribunals 19
adhesion molecules 248, 249
adipocere bodies recovered from water 120, 415
see also saponification
administrative law, personal injury assessment 1250–1
adolescents
age estimation 179–85, 179, 180
adolescents and young adults 792–801
dental examination 795–7, 795–7
non-radiation imaging procedures 800–1, 801
ossification of clavicles 797–9, 798, 799, 801
physical examination 792–3
radiation exposure in X-ray examinations 799–800
X-ray examination 793–5, 793
sudden unexpected death 147
Adonis vernalis (pheasant’s eye) 965
adrenal apoplexy 232
adrenal gland
sepsis 232, 232
weight loss in starvation 497
adrenaline, in asphyxia 374
adrenergic syndrome 863
adult respiratory distress syndrome 227
adversarial legal systems 814–15
adverse drug reactions 556–8, 557, 557,
840–4
inherent toxicity 841
adverse events in hospitalised patients 545,
546
AEIOU rule 51
African Court of Justice and Human Rights 19
age and driving 1002–3, 1002, 1053–4
older drivers 1002, 1054
young drivers 1002–3, 1054
age estimation 179–85, 179, 180
adolescents and young adults 792–801
dental examination 795–7, 795–7
non-radiation imaging procedures 800–1, 801
ossification of clavicles 797–9, 798, 799, 801
physical examination 792–3
radiation exposure in X-ray examinations 799–800
X-ray examination 793–5, 793
auricular surface (Lovejoy’s method) 183–5, 183–5
child pornographic images 804
and ethnicity 801–3
eruption/mineralisation of third molars 802–3
sexual maturation 803
skeletal maturation 801–2
expert reports 803–4

Handbook of Forensic Medicine, First Edition. Edited by Burkhard Madea.
© 2014 John Wiley & Sons, Ltd. Published 2014 by John Wiley & Sons, Ltd.
age estimation (continued)
forensic odontology 1195–7, 1196, 1197
adolescents 795–7, 795–7
and ethnicity 802–3
older people 804
fourth rib (Iscan's method) 181–3, 182
historical aspects 791
living individuals 791–809
older people 804
pubic symphysis (Suchey–Brooks method) 179–80, 181
quality assurance 804–5
age-related morbidity/mortality 766
ageing 761
agonal period 49–51, 50
AICAR 976–7, 977
air embolism 148, 225–6, 226, 239–41, 241, 244
airways
alcohol effects 572
drowning victims 417
trauma 222–3, 222
AK-47 guns 590–1, 591
alcohol 63, 901, 905–9
in alcoholic beverages 910
amount in body 908
analysis of 902, 903
blood alcohol concentration 907, 916–17, 1058, 1059, 1064–5
and driving fitness see driving under influence of alcohol
effects 1058, 1068
immediate 566–7
long-term 568–9
metabolic 569, 569
elimination rate 908
intoxication 1058, 1059
metabolism 904, 905, 906, 907
pharmacodynamics 909
pharmacokinetics 903–8, 907, 908, 917–18
physicochemical properties 901
as poison antidote 849
poisoning 848, 855
properties 1058–9, 1058
tolerance 1069–70, 1069, 1070
toxicity 906
alcohol abuse 566, 917
appearance and social life of alcoholics 568–9
control of abstinence 1105
detection of 1104–5
and domestic violence 747
postmortem biochemistry 641
toxicological markers 1099–107, 1100
carbohydrate-deficient transferrin 1101–2
chemical structure 1101
clinical laboratory parameters 1101
ethyl glucuronide 1100, 1101, 1103–4, 1104
ethyl sulphate 1100, 1101, 1103–4, 1104
fatty acid ethyl esters 1100, 1101, 1102–3
5-hydroxyindolylacetic acid 1100, 1101, 1102–3
methanol/isopropanol/acetone 1102
phosphatidylethanol 1100, 1101, 1102
alcohol dehydrogenase 904–5, 905
alcohol-related deaths 566–77, 916–17, 917
acute alcohol intoxication 567–8, 567
manner of 577
mixed alcohol-drug intoxication 568
natural causes 569–73
non-natural causes 573–7
bolus 575–6, 576
exposure 574–5
falls 575, 575
fires/smoking in bed 574, 574
traffic accidents 576
scene examination 573–4
alcoholic beverages, congener alcohols in 910
alcoholic hepatitis 571
alcoholic ketoacidosis 569–70, 571, 577
acetone/isopropanol blood levels 914
alcohols (general) 900–18
in alcoholic beverages 910
aliphatic 901, 901, 905
analysis of 902–3, 903
chemistry 901–2, 901, 901
disposition and fate 903–16
in doping 974
metabolism 904–5, 904, 905
7-aminoflu nitrazepam, toxicological analysis 1083
7-aminoflu nitrazepam, toxicological analysis 1083
amitriptyline 584
and driving fitness 1092, 1092
toxicological analysis 1083
amphetamine 901
and driving fitness 1050, 1051, 1080
metabolism 898–9
plasma concentrations 930
stability 876, 877
structures 929
toxicological analysis 1082, 1084
amphetamine fingers 255
self-inflicted 781
amyl acetate 960–1
respiratory toxicity and exposure threshold 962
anabolic steroids 973, 975–6
anaemia in children 706
anaesthetics, dissociative 584, 585
anamnesis 73
anaphylactic shock 641
ancestry informative SNPs 1163
animal predation 95, 95, 121, 122
anogenital lesions 683–94, 684–6, 687–91, 692, 693
anthropology/osteology 171–91, 1184–92
biological profile 177–86
age estimation 179–85, 179, 180
diagnosis of race 185–6, 186
height estimation 186, 187
pathological markers 186, 188
sex determination 177–9, 178
diagnosis of species 176–7, 177
disaster victims 196
facial reconstruction 189–90, 189, 190
geographical origin 190
identification of human remains 1185–8, 1188–9
identification of living 1188–91, 1189–91
PMI see postmortem interval
recovery of remains 172–5, 173, 174
anticholinergic syndrome 863
anticholinesterases 967–8
anticoagulant rodenticides 971–2
antidepressants 845, 846
and driving fitness 1091–3, 1092
antidigoxin Fab antibody fragments 849
antihistamines
and fitness to drive 1093–5, 1094
H, 941–2
antimony, sample requirements 853
anus
bruising 690
erthema 690
fissures, lacerations, scars and tags 691, 693
reflex anal dilatation 691
anxiolytics, and driving fitness 1090–1, 1091
aortic aneurysm 221
and traffic accidents 1118–19
aortic dissection 158
aortic rupture 278
aortic stenosis 1119
apnoea in children 706
apoptosis 286
and focal ischaemia 310
apparent death 51–2
AEIOU rule 51
aquaporins 424
Arbeitsgemeinschaft für Forensische Altersdiagnostik (AGFAD) 804–5
argon ion laser 1144
Arias Stella phenomenon 518, 519
arms, dissection of 379
aromatic hydrocarbons 958–9
arrhythmias 605–6, 607, 1014–18
bradycardia 1014
implantable cardioverter defibrillators 1015–18
supraventricular tachycardia 1015
ventricular tachycardia 665, 1015
see also specific types
arrhythmogenic right ventricular dysplasia 612
arrow wounds 361–2, 362
arsenic 953–4
exposure 953
poisoning 70, 849, 855
reference concentrations 954–5
sample requirements 853
toxicity 954
toxicokinetics 953–4
arterial disease, and traffic accidents 1118–19
arterial gas embolism 430, 432, 433
arteritis 663
artificial disturbances 778
atural disturbances 778
Asherman chest seal 224, 225
asphyxiation 367–411
auto-erotic 526
plastic bag 409–11, 410
thoracic compression 397
autopsy 377–9
anterior vertebral muscles 378–9
arms 379
artificial bloodless field 377
back and buttocks 379
hyoid bone, larynx and upper trachea 378, 378
neck 377–8, 378
nuchal muscles 379
oral cavity and nasopharynx 379, 379
children 310, 310, 713
classification 367–9, 370
definition 367, 368
external 369
internal 369
mechanical vs. non-mechanical 369
natural vs. non-natural 369
non-fatal 376
obstruction of respiratory orifices 404–9
larynx 406–7, 407
mouth and nose 404–6, 405
trachea and bronchi 407–9, 408
obstruction of respiratory tract 396–404
bucking 398–9
head-down position 400–2, 401
orthograde suspension 402
pneumothorax 224–5, 224, 277, 403–4
positional asphyxia syndrome 399–400
respiratory paralysis 223, 404
thoracic compression 396–8, 396, 397
unstable thorax 402–3
oxygen deficiency 409–11
hypobaric 372, 411
normobaric/hyperbaric 409–11, 410
pathomorphology 379–83
evidential value 382–3
external 379–81, 380, 381
histological 382
internal 381
radiological 382
pathophysiology 369, 371–5
abnormal body positions 374–5
adrenaline effects 374
alternobaric hypoxia 372
arterial compression 372–3
brain glucose requirement 371
cerebral ischaemia 372
hypobaric hypoxia 372
hyperventilation 371–2
hypoxic brain death 367, 369, 371
hypoxic sensitivity 371
intrathoracic pressure increase 373–4
jugular vein compression 373
normobaric/hyperbaric hypoxia 372
positional crush 223, 223, 532
restraint 526, 532–4, 532
sexual abuse 694
stages of 375–6, 375, 376
strangulation see strangulation
subjective perceptions 376–7
agonal state 376–7
increased sexual response 377
pain and paraesthesia 377
visual impairment 376
aspiration 242
blood 242, 243, 243, 315
fluids 243
assessment of laboratory samples 36
assisted suicide 1224–8
asthma 619–20, 620
astrocytes 283
staining methods 289
atherosclerosis 601, 602
and traffic accidents 1118–19
atlanto-occipital dislocation 275
atomic absorption spectrometry 868
Atropa belladonna (deadly nightshade) 963–4, 966
atropine 849
auricular surface method of age estimation 183–5, 183–5
Australia
fitness to plead 818
statutory limits for alcohol levels 1063
Austria
insanity standards 820–1
statutory limits for alcohol levels 1062
auto-erotic deaths 525–7
asphyxiation
plastic bag 409–11, 410
thoracic compression 397
categorisation 525
injuries to male genitalia 526–7
mechanisms of 526, 526
<table>
<thead>
<tr>
<th>Page</th>
<th>Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>1260</td>
<td><strong>INDEX</strong></td>
</tr>
<tr>
<td>91</td>
<td>autonomic nervous system in diving response</td>
</tr>
</tbody>
</table>
blood components
  allergic reactions 554
  bacterial contamination 554
blood doping 974
blood stains 126–7
detection 1144
DNA analysis 1146–7
blood transfusion errors 552–3, 553, 554
blood vessels, alcohol effects 573
blow fly (Lucilia sericata) 110, 110, 111–12, 111, 112, 114–15, 115
lifecycle 111–12
Bluestar 1144
blunt force injuries 217, 254, 254, 258–82
abdomen and pelvis 279–80, 279–82
chest 276–9
child abuse 727–9, 727, 727, 728, 729
elder abuse 763–5, 764, 765
extremities 280–2
head 266–75
  brain injuries 272–5, 275, 276
  facial trauma 269–71, 270, 271
  intracranial haemorrhage 271–2, 272–5
  scalp 291–2, 291
  skull fractures 145, 267–9, 267–70, 292–3, 292, 293
integument 258–66
  abrasions 254, 258–9, 259, 260
  contusions 254, 259–65, 260–5
  lacerations 254, 265–6, 266
neck 147, 275
pregnant women 523
sternum 220
see also specific injuries
blunt force torture 28–9, 28, 29 sequelae 31
body armour 361
body fluid identification 1146–7
body mass
correction factor 99, 101
estimation of 99
temperature correction 88, 89
body mass index 496
body modification 778
body packers 579–80
body temperature
drowning victims 414
estimation of, rectal 99, 101
regulation 468, 469
see also algor mortis
bog bodies 95, 97
Bohn, Johannes 10
bolus death 406–7, 407
alcohol-related 575–6, 576
bomb curve 176
bombs, self-made 364
Bonaventura-Orfíla, Mathieu-Joseph 10, 10
bone
diagnosis of species 176–7, 177
diaphyseal length and age 180
dispersal of 173
postmortem interval 176
specimen collection 861
see also anthropology/osteology
bone-by-bone radiographic methods 794
bone marrow embolism 241
specimen collection 861
bone marrow derived cells 250
borderline personality disorder 783, 783
bows 361–2
boxing injuries 301
bruises
contusions 273,
intracranial vessels 296–7
lacerations 290
children 305–6
open 297–8
and oxygen deprivation 313
penetrating 713
rotational impact deceleration 713
rotational (inertial) 712–13, 712
shearing/rotational 712
traumatic mechanisms 712
whiplash 304, 713
see also head injuries
brain swelling 274–5, 284–5, 285
breath alcohol analysis 1061, 1062, 1063
Brittain, R.P. 3
bromazepam, toxicological analysis 1084
bromides 942
sample requirements 853
bromisoval 942
chemical structure 941
pharmacokinetics 934
bromofluorocarbons 460
bronchial obstruction 407–9, 408
bronchiolitis 662
bronnopneumonia
  alcohol-associated 572
prurulent 282
Brouardel, P.C.H. 10
Brugada syndrome see long QT syndrome
bruises see contusions
bucket handle fractures 710
bullet embolism 241, 361
bullets 333–4, 334
deforation 340, 341
determination of 355
development 337
fragmentation 337, 340, 341
infectivity 360
lead poisoning 361
mass and muzzle velocity 334, 334, 335
penetration 337
reflection 337
ricochet 336–7
yawing 336–7, 339, 340
buprenorphine 882, 925
chemical structure 944
metabolism 896–7
pharmacokinetics 945
buried bodies 174
burking 398–9
Burna 23, 24
burning torture 29
sequele 31–2, 32
burns 257, 451–60
body checklist 462–3, 462
additional examination 463
adhesions of fire scene on body 462
autopsy 463
clothig 462–3
external examination 463
child abuse 733, 734
classification 453–5, 454, 454, 455
first degree 454, 454, 455
second degree 454, 454, 455
burrs (continued)
  third degree 454–5, 454, 455
  fourth degree 454, 455, 455
  criminological aspects 463–4
  elder abuse 765
  electrical 257, 479–83, 479–83
  current marks (Joule burns) 479–80, 482
  exposure time 451, 453
  heat damage 451, 452
  postmortem 120, 121, 455, 457, 457–9, 457, 460
  microwave 483
  mortality probability 456
  self-inflicted 780
  sources of 452
  surface area 455, 456, 456
  temperature 451, 453, 453
  see also fire injuries
  burst fractures 1114
  buspirone, and driving fitness 1091, 1091
  butalbital, toxicological analysis 1083
  butane 931
  respiratory toxicity and exposure threshold 962
  1,4-butanediol 901, 915–6, 916
  metabolism 906, 916
  toxicity 906, 932
  2-butanol, in alcoholic beverages 910
  n-butanol, in alcoholic beverages 910
  t-butanol 901
  buttocks, dissection of 379
  butyl acetate 960–1
  respiratory toxicity and exposure threshold 962
  butylene glycol 960
  butyro-1,4-lactone 932

cachexia 495, 496
  cadaveric poisons 92
  cadmium 950–1
  exposure 950
  poisoning 855
  reference concentrations 950–1
  sample requirements 853
  toxicity 950
  toxicokinetics 950
  ‘café coronary’ 575–6, 576, 771
  Caffey, John 702
  Caisson’s disease 254
  calcium 641
  calcium disodium EDTA 855
  calibre of firearms 334, 334, 335
  Calliphora vicina 115
  caltrops 1128
  camazepam 934
  Canada
  competence to stand trial 818
  insanity standards 820
  statutory limits for alcohol levels 1063
  cancer 63
  and alcohol consumption 573
  cannabinoids 974
  cannabis 583, 584–5, 919–22
  and driving fitness 1051, 1076–8
  toxicological analysis 1082
  capacity see mental capacity
  caprettamento 591–2
  captive bolt devices 331
  car bombs 593
  car to car collisions 1113–17, 1115
  frequency 1114
  front-end collisions 1114–15, 1115
  rear-end collisions 1116
  seat belt injuries 262, 1114–15, 1115
  side collisions 1115–16
  car to pedestrian collisions 1108–13, 1109–13
  impact 1108, 1110
  loading 1108, 1110, 1111, 1112
  lower leg injuries 1109, 1111
  overrunning 1112–13, 1114
  shoe heel abrasions 1111
  shuffl ing off 1108, 1110, 1111–12, 1113
  trace patterns on car 1110
  tyre tread marks 261, 1113
  carbamate insecticides 968–9
  carbamazepine
  and driving fitness 1095
  poisoning 849
  toxicological analysis 1083
  carbon dioxide 955–6
  effects of 460
  respiratory toxicity and exposure threshold 962
  toxicity 432
  carbon monoxide 955
  poisoning 70, 460, 574
  divers 432
  lividity 79, 80, 80
  smoke inhalation 458–9
  respiratory toxicity and exposure threshold 962
  carboxyhaemoglobin 848, 955
  carboxy
  chemical structure 941
  pharmacokinetics 934
  cardiac causes of sudden death see sudden cardiac death
  cardiac syncope 1019
  cardioinhibitory refl ex cardiac arrest
  (CIRCA) 217–18
  cardiomyopathy 599–600, 600
  dilated 600, 611–12
  hypertrophic 600, 611
  restrictive 612
  stress 612–13, 613
  cardiovascular disease, driving
  fitness 1011–23
  arrhythmias 605–6, 607, 1014–18
  coronary heart disease 1013–14
  heart failure 1020–1
  risk of harm formula 1012–13
  syncope 1018–20
  carisoprodol, toxicological analysis 1083
  carotid artery compression 372–3
  carotid sinus refl ex 374
  carotid sinus syncope 1018–19
  carotid sleeper hold 394, 531
  cartilage, specimen collection 861
  cartidges 332, 333
  blank 335
  tear gas 335
  Casper, Johann Ludwig 3, 10, 11–12, 11, 92
  cataracts 1025–6
  assessment 1026
  classification 1025
  clinical symptoms 1025
  development of 1025
  epidemiology 1025
  mesopic vision 1026, 1031
  relevance for road users 1026
  treatment 1025–6
  catecholamine release 641
  Catha edulis (khat/quat) 964, 966
  cause of death 58–61, 59, 61, 204, 216–36, 217
  autopsy fi ndings 64–5
  errors in diagnosis 67
  infants and children 648
  liability and time 204–5
  postmortem biochemistry 630–46
  sharp force injuries 314–15, 315
  statistics 61–4, 62, 63, 64
  see also specifi c causes
  CBRNE weapons 198
  cell embolism 239
  central nervous system 283–4
  depressants 582
  examination 287–304
  SIDS 659–60
  stimulants 582, 585
  cerebral arterial gas embolism (CAGE) 430, 432, 433
  cerebral hypoxia 375
  cerebral ischaemia 372
  cerebral oedema 274–5, 308–9
  cerebral perfusion pressure 711
  cerebrospinal fl uid 631, 632
  specimen collection 860
  cervical spinal injuries 288, 308–9
  cefazolin, and driving fitness 1094, 1095
  character defi ciencies, and driving 1003–4
  charring 174
  and fi re duration 461–2, 462
chemical biological radioactive nuclear explosive weapons see CBRNE weapons
chemical warfare 837–8
chemokines 248–9, 249
chest
external examination 143
internal examination 146–7
chest fluid specimen collection 860
chest injuries 224–5, 224, 276–9, 277–9
open wounds 224, 224
physical activity after 564, 564
pneumothorax and gastrothorax 224–5, 224
rib fractures 224, 224, 276, 277
sharp force 321, 321, 322, 564, 564
child abuse 702–45, 708
blunt force 727–9, 727, 727, 728, 729
burns 732, 732–4, 734
case history 738
contusions 707, 728
differential diagnosis 735
haematological disorders mimicking 735
criminology 726
definitions 725–6
differential diagnosis 734, 735, 736
documentation 738–9
epidemiology 725–6
eye injuries 734
fractures 729–31, 731, 732
historical aspects 702–3
interpretation of injuries 729, 729
lethal 737–8
Münchausen syndrome by proxy 734, 736
non-accidental head injury 702–25
physical examination 726–34
physical neglect 738
poisoning 737, 737
sexual see sexual abuse
shaken baby syndrome see shaken baby syndrome
child pornographic images, age estimation 804
child protection 723–4, 723
child protection case conference (CPCC) 724
child welfare 836–7
children
abuse see child abuse
apnoea 706
asphyxiation 310, 310, 713
brain death 312–13, 312
brain injuries 304–8, 707–9, 708, 711–13, 712
causes of death 648
clinical autopsy 150
head injuries
accidental 719–21
non-accidental 702–25
hypoxia 310, 310
ischaemia 309–10, 309, 310
permanent global 312–13, 312
juvenile pornography 697
sexually transmitted infections 695–6
skull fractures 304–5, 710, 710, 719–21
smothering 312
strangulation 310–11, 310
sudden unexpected death 147, 164, 308
suffocation 310, 310
China
forensic medicine 5
positional torture 30
Chlamydia trachomatis 695, 696
chloral hydrate 936
metabolism 936
pharmacokinetics 934
chlorazepate 938
chlordiazepoxide 881
metabolism 938
pharmacokinetics 934
toxicological analysis 1082
chloride 640–1
chlorinated hydrocarbons 959
chlorine 957
respiratory toxicity and exposure threshold 962
chlorophenoxy compounds 969–70
choke holds 394
chooking 406–7, 407
cholinergic syndrome 863
cholinesterase poisoning 849
chromatic skin discoloration 414
chromatography 868, 870
drug stability in 882
see also specific types
chromium, sample requirements 853
chyme aspiration 407–9, 408
cigarette burns 32
in children 711
circulation, vital reactions 237–41
embolism see embolism
haemorrhage see haemorrhage
cirrhosis 571–2
citalopram 584
civil forensic psychiatry 813
civil law
competencies 816–17
consent to treatment 817
legal competency 816
retrospective civil assessments 816–17
testamentary capacity 816–17
personal injury assessment 1247–9
dependences 1249
partial temporary functional deficit 1248
permanent aesthetic damage 1249
permanent functional deficit 1248–9
permanent professional repercussion 1248
permanent repercussion on sexual activity 1249
permanent repercussions on sporting and leisure activities 1249
quantum doloris 1248
temporary partial professional repercussion 1247–8
temporary total professional repercussion 1247
total temporary functional deficit 1248
clavicles, ossification 797–9, 798, 799, 801
clearance 890–1
clemastine, and driving fitness 1093, 1094
clinical autopsy 139, 149–52
cardiac conductive system 150–1
children 150
fetal 150
legal background 149
microbiological 152
neuropathological 151–2, 152
occupational lung disease 151
performance of 150–1
special procedures 150–1
clinical forensic medicine examinations 23
ISO/IEC 17025 44
clinical forensic toxicology 835–7
child welfare 836–7
driving under the influence 835–6
drug-facilitated sexual assault 837
workplace drug testing 836
dlobazam
chemical structure 937
pharmacokinetics 934
clofazimine 941
chemical structure 941
pharmacokinetics 934
clonazepam, toxicological analysis 1082
clorazepate 934
and driving fitness 1091, 1091
clothing and textiles
asphyxiation by 404–6, 405
burned bodies 462–3
examination of 140–1
shooting incidents entrance wounds 345–9, 346–9
fibres in wound 351
position of victim 354
cocaethylene, toxicological analysis 1082
cocaine 583, 585, 926–9
absorption 927
distillation 927
and driving fitness 1050, 1051
elimination 927–9, 928
and fitness to drive 1079–80
metabolism 897–8, 927–9, 928
physiological effects 927
cocaine (continued)

plasma concentrations 928

stability 875, 876

toxicological analysis 1082, 1084

cockroaches, skin lesions caused by 123
cocolic 924–5

chemical structure 944

metabolism 897, 925

pharmacokinetics 945

plasma concentrations 925

toxicological analysis 1083

coffin birth 92

coin-rubbing 260
colchicine 964

Colchicum autumnale (autumn crocus) 964, 966

cold injuries see hypothermia
cold shock 412–13

cold stiffening 81

collagens 245, 250, 250

Colombia 22

colour vision disorders 1029, 1031–2

colposcopy 683
coma 633

coma blisters 935–6

Committee Against Torture 26

commotio cerebri 300

compensatory anti-inflammatory response syndrome 227–8

competency

civil law 816–17

consent to treatment 817

legal competency 816

retrospective civil assessments 816–17

testamentary capacity 816–17

criminal law 817–19

competence to stand trial 817–18
determination and consequence 818–19

duration of hospitalisation 819

fitness to plead 818

indications for hospitalisation 819

no fitness to plead/competence to stand trial 818

treatment refusal 819

compound method for time of death 101–3, 102, 103

crime scenes 125–7

aerial accidents 1128

alcohol-related deaths 573–4

DNA evidence 1143–5, 1144

documentation 125–6

drug addiction 580

initial examination 125–6

integrating chart for casework 103–5

potential health hazards 126

securing stains and evidence 126–7

sexual homicide 540

sharp force injuries 315–16, 315, 316

tasks 125–6

time of death see time of death

criminal forensic psychiatry 813

criminal law

competencies 817–19

competence to stand trial 817–18
determination and consequence 818–19

duration of hospitalisation 819

fitness to plead 818

indicators for hospitalisation 819

no fitness to plead/competence to stand trial 818

treatment refusal 819

personal injury assessment 1236–7

criminal offences, faking of 782, 782

criminal responsibility 819–24
determination and consequence 822

diminished responsibility and overwhelming emotion 821–2

insanity standards 819–21

no insanity defence 821

preventive detention 823

rehabilitation and security 822–4

criminality 207–10

homicide 207–9, 208, 210

non-homicidal events 209

suicide 209, 210

torture see torture

crossbows 361–2

Crowle's double stain 1144
diphenhydramine
chemical structure 941
and driving fitness 1093, 1094
pharmacokinetics 934
toxicological analysis 1083
diplopia 1028–9
diquat 970
direct current 478
disaster victim identification (DVI) 192–200, 1131–3
CBRNE weapons 198
dactyloscopy 1132
dNA typing 1133
documentation 21, 194, 195, 198–9
international cooperation 193–4, 194
medical–anthropological parameters 1132–3
quality management 198–9
standardisation 196
team structure 194–6, 195
diseases affecting driving fitness 1004, 1052
dismemberment 565
dissecting aneurysm 297
distress of corpse 162
dissecting aneurysm 297
distress of corpse 162
environmental conditions 434
dive equipment 435
dive profile and history 434–5
diabetic conditions 434
diabetic conditions 434
medical and personal history 434
main causes of death 432–3, 432, 433
medical and personal history 434
medical and personal history 434
main causes of death 432–3, 432, 433
medical and personal history 434
medical and personal history 434
main causes of death 432–3, 432, 433
medicolegal autopsy 435–8
diatom test 437
external examination 435–6
forensic imaging 437, 439
gas detection 437–8
histology 437
internal examination 436–7
molecular autopsy 437
toxicity 437
physiopathology 429–32
decompression illness 431
decompression sickness 430–1
diving gas problems 431–2
pulmonary barotrauma and arterial gas embolism 430
diving response 413
DMPS 849, 855
DMSA 849, 855
DNA analysis 20, 1143–83
body fluid identification 1146–7
contamination 1143
disaster victims 1133
DNA typing 1148–55
history 1148
kits 1150
mixture interpretation 1153–4, 1155
PCR amplification 1149–51, 1151
STR polymorphisms 1148–9, 1149, 1151–3, 1152–4
evidence collection 1143–6, 1144
kits 1146
extraction and quantitation 1147–8
forensic DNA databases 1160–2, 1161
haplotypic markers 1157–60, 1158, 1159
mitochondrial DNA 1159–60, 1159
Y chromosome-specific STR
loci 1157–9, 1158
ISO/IEC 17025 37–9
mixture interpretation 1153–4, 1155
novel techniques 1164–5
paternity testing 1165–72
autosomal markers 1166
biostatistics 1170–1
male and female lineage markers 1166–70, 1168, 1169, 1170
quality assurance and ethical considerations 1171–2
population genetics 1155–7, 1156
SNPs 1162–4, 1162
stain analysis 1143–65
DNA profiling 1155–7, 1156
DNA transfer in shooting incidents 353
doctor–patient relationship 1216
autopsy report 152–3
child abuse 738–9
crime scenes 125–6
death certificate see death certificate
disaster victim identification 21, 194, 195, 198–9
errors in 1209
human rights violation 23–5
laboratory samples 36, 43
domestic violence 208, 746–50
aetiology 747
cycle of 748
diagnostic procedures 748
effects and consequences 747–8
gay and lesbian relationships 758
and HIV 748–9
older women 749
see also child abuse; elder abuse
Domestic Violence Risk Appraisal Guide (DVRAG) 748
doping 837, 972–7
anabolic steroids 973, 975–6
available matrices 972, 974
banned substances and methods 972, 973–4
black-market/non-approved products 976–7, 977
health issues and fatalities 977
peptide hormone analysis 976
sampling procedures 975
dotheipin, and driving fitness 1092, 1092
doxepine, and driving fitness 1092
doxylamine
chemical structure 941
pharmacokinetics 934
died blood spot sampling technique 879
driving aptitude 1074
assessment 1008–9
definition 998
epidemiological studies 1001
need for coordination 1000, 1001, 1001
see also driving fitness
driving behaviour 998–9, 999
Keskinen’s model 999
Mihoni’s model 999, 1000
driving capability 1074
drug testing 1084, 1084
driving fitness 997–1010, 1074
assessment 1005–9
detection of unfit drivers 1006–7
preconditions for driving licence 1005–6
cardiovascular disease 1011–23
arrhythmias 605–6, 607, 1014–18
coronary heart disease 1013–14
heart failure 1020–1
risk of harm formula 1012–13
syncpe 1018–20
deaths associated with driving 69
definition 998
diabetes 1036–43
epidemiology 1001, 1044–56
analytical 1046–7
causal factors 1049, 1049
descriptive 1044–6
drugs 1049–51, 1050, 1051
quality assurance 1047
studies in 1047–54, 1048–51
epilepsy 1033–5
factors affecting 1001–5
age 1002–3, 1002, 1053–4
alcohol see driving under influence of alcohol
character deficiencies 1003–4, 1054
diseases and indispositions 1004–5, 1052–3
illegal drugs see driving under influence of illegal drugs
intellectual deficits 1003–4
interaction behaviour 1003–4
prescription medicines see driving under influence of prescription medicines
level of evidence 1011
medical aspects 1011
vision/visual fields 1024–32
effects of 1031–2
older motorists 1031–2
post-eye surgery 1030–1
vision problems 1025–9
visual field disorders 1029–30
driving skills 1067
driving performance tests 1000–1, 1067
driving under influence of alcohol (DUIA) 835–6, 916–17, 917, 1005, 1050, 1051, 1057–73
drug–drug combinations 842–3, 843
drug–drug associations see driving under influence of prescription medicines
drug-facilitated sexual assault 837
drug screening 866–72
analytical methods 869–70
confirmation tests 867
instability of drugs during 882–3, 882
instrumentation 868–9, 868, 869
isolation step 867–8
method performance 870–1, 871
target substances 866
drug stability in samples 873–88
blood from living individuals 875–6
definitions 873–7, 874, 875
evaluation of 883–5
postmortem specimens 877–8, 878
processing and analysis 882–3, 882
sampling artefacts 878–80, 880
storage 881–2, 881
effect of 1031–2
heroin and opioids 1050
heroin and opioids see also heroin and opioids
forensic toxicological analyses 1081–4, 1076
epidemiological data 1075–6
laboratory diagnoses 1076–8, 1067, 1068
characteristics of offenders 1063–6
age and gender 1063–4, 1064, 1064
blood alcohol concentration 907, 916–17, 1058, 1059, 1064–5
recidivism 1065–6, 1066
medical determinations 1059–63
blood alcohol analysis 1059–61, 1060, 1062, 1063
breath alcohol analysis 1061, 1062, 1063
blood from living individuals 875–6
blood from living individuals see also blood from living individuals
isolation step 867–8
methods of analysis 869–70
method performance 870–1, 871
postmortem specimens 877–8, 878
processing and analysis 882–3, 882
sampling artefacts 878–80, 880
storage 881–2, 881
epidemiological data 1075–6
forensic toxicological analyses 1081–4, 1082–4
hallucinogens 1080–1
heroin and opioids 1050, 1078–9
mixing drugs 1081
roadside drug testing 1076, 1077
driving under influence of prescription medicines 1005, 1051–2, 1087–98
antidepressants 1091–3, 1092
antihistamines 1093–5, 1094
anxiolytics 1090–1, 1091
hypnotics 1088–90, 1089
drowning 243, 243, 411–27
children 666
cold shock 412–13
contributing causes 425
disposal of corpse in water 426
diving response 413
dry 413, 417, 419
future studies 427
homicide 426
incidence 414
laboratory diagnosis 420–3
aquaparins 424
artificial tracers 421
controversies 422
diatom method 421–3, 421, 422, 423–4
electrolytes 423
exogenous substances 421
false positives 422
microbiological tests 423
molecular autopsies 424
sample preparation 423
natural deaths in water 425
organ effects 412
pathophysiology 411–12
postmortem changes 414–15
early 414, 415
postmortem diagnosis 417–25
analytical morphometry 420
electron microscopy 420
forensic radiology 424
macroscopic changes 417–19, 417, 418, 418
microscopic changes 419–20, 420
see also laboratory diagnosis, above
postmortem submersion time 414, 417
pulmonary emphysema 242
sequence of events 412
site of death 415–17
cadaver buoyancy 415–16, 416
cadaver drifting 416–17
suicide 425–6, 426
victim identification 413–14
drug addiction 63, 577–88, 918–19
autopsy findings 580–2, 581, 582
body packs 579–80
cause of death 582
chyme aspiration 407–9,
death from drowning 413, 417, 419
decubitus ulcers 768–71, 769, 770
forensic autopsy 768
forensic neuropathology 771
starvation, malnutrition and dehydration 771
violent homicide 771–2
mimics of 766–7
suicide 413, 417, 419
Dunant, Henri 26
dural haematomata 293–4
Duret haemorrhage 301
Dusky test of competence 818
duties of forensic medicine 15–17, 16
dynphagia, bolus death 406–7, 407
ear bleeding from 269, 489
tympanic membrane rupture 489
ear pulling 727
earthing, grounding injuries 481, 482
ebastine, and driving fitness 1094, 1095
ecstasy see amphetamines
Egypt 25
ecstasy see amphetamines
Ecuador 25
elder abuse 761–75
abandonment 766
clinical evaluation 767–8
legal capacity 767
physical examination 768
psychological, neurological and cognitive 767–8
definition and scope 761–3, 762
financial exploitation 766
forms of maltreatment 763
global prevalence 761
medicolegal investigations 768–72
decubitus ulcers 768–71, 769, 770
forensic autopsy 768
forensic neuropathology 771
starvation, malnutrition and dehydration 771
violent homicide 771–2
mimics of 766–7
accidental trauma 766–7
chronic disease 766
self-neglect 766
cell/tissue 239
cerebral arterial gas embolism 430, 432, 433
fat 148, 226, 226, 238–9, 241
thromboembolism 226–7, 241
ependymitis, and driving fitness 1094, 1095
encephalopathy in children 705–6, 706, 711
endocardial fibroelastosis 664
endocarditis, intravenous drug users 579, 579
endothelial cells, staining methods
endothelial receptors 479
endothelial growth factor 29
endothelial toxicity and exposure threshold 962
eosinophilic myocarditis 609, 610
epidemiology 841
analytical 1046–7
catatops 1025
child abuse 725–6
descriptive 1044–6
driving fitness 1044–56
heart failure 1020
hypothermia 469, 471–2
medical errors 546–58
postmortem mutilation 565
self-harm 776–7
SIDS 655–6, 655, 656
stillbirth 505
epidermal growth factor 248
epidural haematoma see haematoma, extradural
epidural haemorrhage 221, 271, 272, 273, 294, 294
children 305
shaken baby syndrome 306, 666
epiglottitis 662
epilepsy 706
and driving fitness 1033–5
and general road safety 1034
and traffic accidents 1119
epiphyses, fusion of 179, 180
equipment, laboratory 37
Eschweiler–Clarke reaction 881
esmirtazapine, and driving fitness 1089
eszopiclone 933–40, 939
pharmacokinetics 934
ethanol see alcohol
ethchlorynol 942
chemical structure 941
pharmacokinetics 934
ethnicity
and age estimation 801–3
eruption/mineralisation of third molars 802–3
sexual maturation 803
skeletal maturation 801–2
identification of 185–6, 186
disaster victims 1133
epidermal growth factor 248
endothelial growth factor 29
endothelial toxicity and exposure threshold 962
eosinophilic myocarditis 609, 610
epidemiology 841
analytical 1046–7
catatops 1025
child abuse 725–6
descriptive 1044–6
driving fitness 1044–56
heart failure 1020
hypothermia 469, 471–2
medical errors 546–58
postmortem mutilation 565
self-harm 776–7
SIDS 655–6, 655, 656
stillbirth 505
epidermal growth factor 248
epidural haematoma see haematoma, extradural
epidural haemorrhage 221, 271, 272, 273, 294, 294
children 305
shaken baby syndrome 306, 666
epiglottitis 662
epilepsy 706
and driving fitness 1033–5
and general road safety 1034
and traffic accidents 1119
epiphyses, fusion of 179, 180
equipment, laboratory 37
Eschweiler–Clarke reaction 881
esmirtazapine, and driving fitness 1089
eszopiclone 933–40, 939
pharmacokinetics 934
ethanol see alcohol
ethchlorynol 942
chemical structure 941
pharmacokinetics 934
elder abuse (continued)
neglect 765–6
non-physical 767
physical 763–5
blunt force injuries 763–5, 764, 765
thermal burns 765
screening questions 767
sexual 765
electric current 478
electric eels 485
electric fences 483
electrical excitability of muscle 76–8, 77, 78, 78
electrical injuries 254, 257, 478
auto-erotic 526
basic concepts 478, 478
electrocutation 477–87
lightning 257, 487–93
electrical torture 29
sequelae 31
electrocutation 477–87
atypical 483–4
earthling/grounding injuries 481, 482
electric fences 483
high voltage injuries 481, 482, 483
let-go phenomenon 478
microwave burns 483
skin burns 479–83, 479–83
standard operating procedures 484–5
case history 484
postmortem examination 484–5
scene investigation 484
special procedures 485
startle reactions and reflex
movements 479
stun guns and electro-shock stun
belts 483
Tasers 483–4
typical 477–83, 478–83
in water 485–7
bath 486–7
electric eels 486
swimming pools 485
underwater welding 486
electroencephalography 722
electrolyte imbalances 640–1
drowning victims 423
electron microscopy in drowning
victims 420
electro-shock stun belts 483
elimination rate constant 891–2
ELISA 1146
embalming
postmortem injuries 123–4
and specimen collection 862
embolism 225–7, 238–41, 241
air see air embolism
amniotic fluid 227, 239
bone marrow 241
bullet 241, 361
elder abuse (continued)
neglect 765–6
non-physical 767
physical 763–5
blunt force injuries 763–5, 764, 765
thermal burns 765
screening questions 767
sexual 765
electric current 478
electric eels 485
electric fences 483
electrical excitability of muscle 76–8, 77, 78, 78
electrical injuries 254, 257, 478
auto-erotic 526
basic concepts 478, 478
electrocutation 477–87
lightning 257, 487–93
electrical torture 29
sequelae 31
electrocutation 477–87
atypical 483–4
earthling/grounding injuries 481, 482
electric fences 483
high voltage injuries 481, 482, 483
let-go phenomenon 478
microwave burns 483
skin burns 479–83, 479–83
standard operating procedures 484–5
case history 484
postmortem examination 484–5
scene investigation 484
special procedures 485
startle reactions and reflex
movements 479
stun guns and electro-shock stun
belts 483
Tasers 483–4
typical 477–83, 478–83
in water 485–7
bath 486–7
electric eels 486
swimming pools 485
underwater welding 486
electroencephalography 722
electrolyte imbalances 640–1
drowning victims 423
electron microscopy in drowning
victims 420
electro-shock stun belts 483
elimination rate constant 891–2
ELISA 1146
embalming
postmortem injuries 123–4
and specimen collection 862
embolism 225–7, 238–41, 241
air see air embolism
amniotic fluid 227, 239
bone marrow 241
bullet 241, 361
INDEX

expert evidence 562–95
alcohol-related deaths 566–77
drug addiction 577–88
Mafia-related deaths 587–93
physical activity after injuries 562–5
postmortem mutilation 565–6, 565, 566
priority and order of injuries 562, 563
survival time 562–5
expert witnesses 25
see also expert evidence
explosive injuries 362–5
autopsy 365
car bombs 593
injury types 364–5, 364, 365
mechanisms of injury 363
fires 362–3
reconstruction 365
exposure deaths in alcoholics 574–5
external examination 57–74, 58
cause of death 58–61, 59, 61
autopsy findings 64–5
statistics 61–4, 62, 63, 64
checklist 71
conditions/time of death 73
forensic autopsy 140–3
identification of corpse 71
postmortem changes 72
special circumstances
deaths behind steering wheel 69
deaths by poisoning 69–70, 69–70, 70
deaths in bathroom 68
deaths in police custody 68
deaths in prison 68
deaths in psychiatric hospitals 69
multiple corpses 70–1
unexpected deaths in hospital 68
systematic 72–3
external genitalia 143
external hemorrhage 219, 219
external lesions 141
extrapyramidal syndrome 865
extra-uterine pregnancy 517–18, 517, 518
extremities
blunt force injuries 280–2
examination of 143
fractures in children 710, 710
physical activity after injury 565
sharp force injuries 320–1, 321
see also specific areas
eye
drying of 116, 117
injuries in child abuse 734
petechiae 142
tache noir 90, 90, 116, 117
see also visual field defects; visual problems
eye movement disorders 1028–9, 1031
25 F 9 245
facial reconstruction 189–90, 189, 190
facial trauma 269–71, 270, 271
road traffic accidents 1113
factitious disorders 778
factor IX deficiency 735
falanga 28, 210
sequelae 31
falls 146
alcohol-related 575, 575
toddlers 719–21
family
dealing with 163–4
freezing procedures 164
informer about death 161
Fannia cannicularis 111
Fannia manicata 110, 111
Fannia scalaris 111
fat embolism 148, 226, 226, 238–9, 241
grading 241
fatal toxicity index 835, 835
fatty acid ethyl esters 364
fetal bone fractures 731
fetal death 150
fetal blood 150
fetal examination 143
fetal fibronectin 248
fibroblast growth factor 248
fibronectin 245, 250, 250
Fidelis, Fortunatus 9
fingertip bruises 262–3
fire gases 460
fire injuries 254, 257
burns 257, 451–60
charring 174, 461–2, 462
checklist 462–3
postmortem 120, 121, 455, 457, 457–9, 457, 460
smoking in bed 574, 574
see also specific injuries
firearms 328–61, 329
acoustics 360
ammunition 332–7
blank and tear gas cartridges 335
bullets 333–4, 334
calibre 334, 334, 335
cartridges 332, 333
primer and propellant 332–3
shotgun 334–5, 335
special 335
barrel 328
breech and lock 328–9
bullets 333–4, 334
deviation 340, 341
determination of 355
deviation 337
emboli 361
fragmentation 337, 340, 341
infectivity 360
lead poisoning 361
mass and muzzle velocity 334, 334, 335
penetration 337
reflection 337
ricochet 336–7
yawning 336–7, 339, 340
classification 329–31, 329, 330
pistols 330, 330
revolvers 329–30, 330
rifles 330, 330
shotguns 330–1, 330
determination of 354–5
firing marks 354–5
muzzle imprint 355
exterior ballistics 336
angle of incidence 336
environmental conditions 336
maximum range 336
trajectory 336
incidents involving see shooting incidents
interior ballistics 335–6
muzzle phenomena 335–6
recoil 336
intermediate targets 336–7
limiting angle 337
ricochet and yawing 336–7
wound ballistic consequences 337
muzzle modifications 361
sights 328–9
silencers 360–1
special types 331–2
air weapons 331
black powder firearms 331
captive bolt devices 331
non-lethal projectiles 332
pen guns and signal guns 332
stud/nail guns 331
zip guns 332
firing marks 354–5
first-order elimination 891–2
first pass metabolism 893
fitness to drive see driving fitness
fitness to plead 818
five-point tie 30
flashfire deaths 461
floating injuries 119, 120
floitation test of lungs 242, 510
fluid imbalance 640–1
flumazenil 849
chemical structure 937
pharmacokinetics 934
flunitrazepam (Rohypnol) 696
chemical structure 937
and driving fitness 1088, 1089
pharmacokinetics 934
toxicological analysis 1084
fluoride, sample requirements 853
fluorine 957
respiratory toxicity and exposure threshold 962
fluorocacetic poisoning 80
fluoxetine 584
and driving fitness 1092, 1093
flurazepam, and driving fitness 1088, 1089
Fodere, François Emanuele 10
fomepizole 849, 904
foreign bodies
aspiration of 407–8, 408, 666
vaginal 690
forensic anthropology see anthropology/
osteology
forensic autopsy see medicolegal autopsy
forensic ballistics see ballistics
forensic DNA databases 1160–2
forensic DNA laboratories, ISO/IEC 17025 37–9
forensic entomology 108–16
blow fly (Lucilia sericata) 110, 110,
111–12, 111, 112, 114–15, 115
case reports 114–16, 115, 116
collection of insects 112
estimation of postmortem interval 113–14
identification of insects 112–13
storage of insects 112
succession 108, 110–11, 110
see also specific species
forensic genetics 21
forensic imaging 153–9
age estimation in adolescents 793–5, 793
CT 154–5, 155–8
CT angiography 155–6, 158
dental charts 1194, 1195
disaster victims 197–8
diving accidents 437, 439
drowning victims 424, 424
MRI 156
non-accidental head injury 721–2
non-radiation procedures 800–1, 801
SID and SUDI 667–8
standards 197–8
surface scanning 157–8, 159
forensic medicine
autopsy standards 34–6
as book science 8–10, 9
current problems 13
definition 3
development of 4
as experimental science 10–13
forensic neuropathology 283–313
brain 287–8
cell and tissue reactions 284–6
central nervous system 283–4
derby abuse 771
head and spine 289–304
inflammation 287
paediatric 304–13
regenerative capacity 287
spinal cord and cervical spine 288
staining methods 289
spinal cord and cervical spine 288
staining methods 289
tissue decay and reactivity 286
forensic observers/inspectors 21–2
forensic odontology 1193–203
age estimation 1195–7, 1196, 1197
adolescents 795–7, 795–7
and ethnicity 802–3
older people 804
bite marks 1199–201, 1200, 1201
dental charts 1193–5, 1194, 1195
dental investigation 147
dental schemes 194
dentition development 1196
disaster victims 195, 196, 1132
guidelines 196
identification of unknown persons 1197–9, 1198, 1199
decayed missing filled teeth (DMFT)
index 1198, 1199
pink teeth in water-related deaths 414
root transparency 184
third molar eruption/or
mineralisation 802–3
forensic pathology
disaster victims 195
ISO/IEC 17025 43–4
forensic physicians 16
forensic psychiatry 813–28
civil law competencies 816–17
consent to treatment 817
legal competency 816
retrospective civil assessments 816–17
testamentary capacity 816–17
criminal law competencies 817–19
competence to stand trial 817–18
determination and
consequence 818–19
duration of hospitalisation 819
fitness to plead 818
indications for hospitalisation 819
no fitness to plead/competence to stand
trial 819
treatment refusal 819
criminal responsibility 819–24
determination and consequence 822
diminished responsibility and
overwhelming emotion 821–2
insanity standards 819–21
no insanity defence 821
rehabilitation and security 822–4
definitions 813–14
examinations 815–16
formal education in 824–5
inquisitorial vs. adversarial legal
systems 814–15
landmark court cases 826
legislation 825–6
forensic reconstruction
explosive injuries 365
shooting incidents 344–50
forensic security hospitals 824
forensic toxicological laboratory standards
see laboratory standards
fourth rib method of age estimation 181–3, 182
fractures
bending 213
burst 1114
child abuse 729–31, 731, 732
compression 215
healing 765
mandible 270–1
Messerer’s 1109, 1111
pelvis 280
ribs 224, 247, 276, 277
shell 214
skull see skull fractures
vertebrae 278–9, 279
France 10–11
statutory limits for alcohol levels 1062
Frank, Johann Peter 12
freedom of therapy 1217–18
freon 931
front-end collisions 1114–15, 1115
frontal sinuses, in victim identification
1186
frost erythema 256, 472, 473
fungal growth 94
fungal myocarditis 609
fungicides 970–1
dithiocarbamates 971
hexachlorobenzene 971
pentachlorophenol 971
phthalimides 971
G 16/1 245
GABA analogues 583–4, 583
gagging 405
galactosaemia 722
gamma-butyrolactone 932
gamma-hydroxybutyrate 696, 931–2, 932
toxicological analysis 1083
Gardner–Diamond syndrome 736
garroting 390
see also ligature syndrome
gas and dust explosions 364
gas chromatography–mass spectrometry 868, 883
gas embolism
arterial 430, 432, 433
post-abortion 520–1
venous 431
gas–liquid chromatography 902
gastric juice, regurgitation of gastric emptying 107
gastrothorax 224–5, 226
geographical origin 190
Gardner–Diamond syndrome 847
Gas chromatography–mass spectrometry 868, 883
gas–liquid chromatography 902
genes
in body cavities diving accidents 437–8
subcutaneous expansion in gunshot wounds 348, 349
fire 460
inhalation 218, 243, 410
occupational exposure 961, 962
partial pressure 430
respiratory toxicity 962
toxicology 95–8
see also specific gases
gastric contents
specimen collection 860
and time of death 105–7, 107
gastric emptying 107
gastric juice, regurgitation of 123, 124
gastroenteritis, and sudden infant death 663
gastrointestinal tract
absorption from 893–4
drowning victims 419
multiple organ failure 233, 233
vital signs 243–4
gastrothorax 224–5, 226
gene doping
specimen collection 861
and time of death 105–7, 107
gastric emptying 107
gastric juice, regurgitation of 123, 124
gastroenteritis, and sudden infant death 663
gastrointestinal tract
absorption from 893–4
drowning victims 419
multiple organ failure 233, 233
vital signs 243–4

Glasgow Coma Scale 223
for children 706
glass injuries 266
Glasgow coma scale 223
for children 706
glass injuries 266
glaucoma 1027
glial fibres, staining methods 289
gliding contusion injury 301
glucocongorsteroids 974
glucose
blood levels 635
metabolism 633–7, 633
glufosinate 970
glutathione 938–9, 938
pharmacokinetics 934
glycerol 901
glycols 959–60, 959
butylene glycol 960
diethylene glycol 906, 914–15, 960
ethylene glycol see ethylene glycol propylene glycol 960
glycoprotein, P-, transporter 893–4
glycerol 901
glutaric acid 610, 610
specimen collection 861, 863

Great Britain see United Kingdom

Greece, statutory limits for alcohol levels 1062
Greulich–Pyle radiographic atlas 794, 801
Gustafson–Johanson procedure 184
gyroplane accidents 1130
Haberd, Albin 12
haematological disorders 735
haematoma
chest 254
dural 293–4
epidural 294, 294
extradural 221, 271, 272, 273
heat-induced 458, 459
peri orbital 263, 263
scap 246
streak-like 261–2
subdural 221, 268, 271, 271, 273, 274, 274

Temporal bone 247
tram-like 261, 262
haemodialysis 850
haemofiltration 850
haemoglobin HbA 4c 635
haemoperfusion 850
haemopericardium 146, 220, 220
haemoperitoneum 220, 220, 281
haemophilia 735
haemorrhage 141, 237–8, 239, 239, 240
catastrophic 218–22
diapedetic 237
external 219, 219
internal 219–21, 220, 221
intracerebral 301, 301, 621–3
intracranial 271–2, 272–5, 293–6, 294, 295, 296
petechial see petechial haemorrhage
postmortem blood loss 221–2
retrinal 307–8, 702
scalp 145
temporal bone 419
thorax 146
‘walk and die’ 222
haemorrhagic–dysoric syndrome 382
haemothorax 220, 220, 277
hair 142
drug stability in 880, 880
ethyl glucuronide in 1103–4, 1104
specimen collection 861, 880
hair pulling 727
hallucinogens 584, 585–6
and driving fitness 1080–1
hand grenades 364, 365
hanging 142–3, 383–9
accidental 389, 389
alcohol-related 573
children 312
complete 383–4, 384, 385
definition 383
extravasation 386
frequency/occurrence 383
homicide 388–9
incomplete 383, 384, 385, 388
ligature marks 385–6, 385, 386
Mafia-related deaths 591–2
observations and time relationships 376,
hanging (continued)
pathomorphology 384–8, 385, 386, 388
petechial haemorrhage 240
physical activity after 563–4
strangulation devices 383
suicide 385, 388
haplotypical markers 1157–60,
head-down asphyxiation 400–2,
head hashish see delta-9-tetrahydrocannabinol
head injuries 223, 266–75
heart health insurance law 1220–1
heart failure 1020–1
Hemastix 1144
Hemident 1144
Henry’s law 429
herpesvirus 973
heroin 923–4
heralding behaviour 766
Hofmann, Eduard von 12, 13, 52
hodie please restraint 532
Holzer blisters 69
homicide 207–9, 208, 210
homonymous hemianopsia 1030
homosexuals, violence against 757–60
characteristics 757–8
statistical problems 758–9
‘honour killings’ 209
HOPE (Heart Outcomes Protection Evaluation trial) study 1014
hormone antagonists 973
hormones, in doping 973, 976
hospitalisation on psychiatric grounds 819
duration of 819
hospitals
forensic security 824
unexpected deaths in 68
hot-air balloon accidents 1130
HSPG 245, 250
human biomonitoring values 948
human papillomavirus 695
human remains
display of 1232–5
PMI see postmortem interval
recovery of 172–5, 173, 174
use without explicit consent 1235–6
see also corpses
human rights 18–33
ad hoc and permanent tribunals 19
autopsy protocols 22–3
clinical forensic examinations 23
courts 19
exhumations and autopsies 19–21
expert witnesses 25
forensic documentation 23–5
forensic observers/inspectors 21–2
international expert network 26
legislation 18
torture see torture
training and research 25–6
humers fractures 731
Hungarian red 1144
hunting accidents 360
hydrocarbons 958–9
aliphatic 958
aromatic 958–9
chlorinated 959
hydrocephalus 285–6
children 306
hydrochloric acid 460
hydrocodone 944
toxico logical analysis 1083
hydrocyanic acid 70, 460
hydrogen cyanide see cyanides
hydrogen sulphide 958
poisoning 69
lidity 80
respiratory toxicity and exposure
threshold 962
toxicity 958
hydromorphone 945
toxicological analysis 1083
hydroxizine, and driving fitness 1093,
1094
hydroxocobalamin 849
5-hydroxyindolylactic acid 1100, 1101,
1102–3
5-hydroxytryptophol 1100, 1101, 1102–3
hymen 685, 686
abnormalities 688–9, 692
hyoid bone, dissection of 378, 378, 380
hyperacute cervicomedullary syndrome
711
hyperglycaemia 1037
hypertension, in diabetes 1039
hypertensive heart disease, and traffic
accidents 1118
hyperthermia 254
definition 465
and SIDS 653
hypertrophic cardiomyopathy 600, 611
and sudden infant death 664
hypnotics see sedatives and hypnotics
hypobaric hypoxia 372, 411
hypoglycaemia 633, 636–7
in diabetes 1037–8
and driving 1041–2
factitious 637
and traffic accidents 1119
hypospadias 381
hypostasis 79–80, 79, 79
drowning victims 414
hypothermia 50, 225, 254
clinical phases 469, 470, 470
cold water immersion 412–13
criminal aspects 474–5
epidemiology 469, 471–2
frost erythema 256, 472, 473
integrating chart for casework 105
localised 471–2, 471
morphological/biochemical
changes 472–4, 472
blood colour 472
core muscle haemorrhages 474
gastric mucosal haemorrhages 472,
473, 474
lipid accumulation 474, 475
lidity 80, 472
pancreas changes 474, 474
pathophysiology 468–9
duration of cold exposure 468–9
final cause of death 469
temperature regulation 468, 469
peripheral cold injuries 471
postmortem biochemistry 641
signs and symptoms 470
undressing/hide and die phenomena
471
hyperventilation 371–2
in children 706
hypovolaemic shock in children 706
hypoxia 222
alternobaric 372
of ascent 431
children 310, 310
divers 431–2
hypobaric 372, 411
normobaric/hyperbaric 372, 409–11, 410
hypoxic brain death 367, 369, 371
see also asphyxiation
hypoxic ischaemia, and subdural
haemorrhage 721
hypoxic sensitivity 371
hypoxia 377
iatrogenic maternal death 522–3
ibuprofen 584, 587
ICAM-1 245, 249
identification of corpse see victim
identification
identifying features 141
identity SNPs 1162–3
see also asphyxiation
imipramine, and driving fitness 1092,
1093
inhalation 245, 246
influenced by illegal drugs
screening for see drug screening
see also drug addiction; opioids;
toxology; and specific drugs
imprinting 245
identification of need see victim
identification
immunoassay 868, 869–70
immunohistochemical markers of wound
age 245
immunohistochemistry, wound age
estimation 245
impact (acceleration/deceleration) brain
injury 711–12
impedance 478
implantable cardioverter
defibrillators 1015–18
risk of arrhythmia occurrence 1017–18
risk of arrhythmia recurrence 1015–16
risk of harm to patients/
bystanders 1016–17
risk of syncope 1016
in-custody deaths 68, 528–30, 529
alcohol-related 573
death certificate 536–7
investigation of 535–6
inborn errors of metabolism, screening
for 722
incapacitation after shooting
incidents 342–4
incidence 1044
inductively coupled plasma mass
spectrometry 868
infanticide 206, 504–15
autopsy 508
sample taking 511–13, 512, 513
birth-related changes 508–9
causes of death 511
diagnosis 504, 505
duration of life 508–9
history 504
incidence 505
investigation of mothers and
neonates 507–13
proof of live birth 510–11, 510
viability and maturity 509–10, 509, 510
infants
causes of death 648
mortality 648
sudden unexpected death (SUDI)
647–77
see also children
infarction 63
infection 63, 227
infection screen 722
infectious diseases 162
inflammation 248
brain 287
influenza, pathological findings 618
informed consent see consent to treatment
inhalation 242
gases 218, 243
soot 242–3, 243, 244
inhalation trauma 453, 460
injuries 204
air embolism see air embolism
blunt force 217, 220, 254, 254, 258–82
chest 224–5, 224
definition 203
fat embolism 148
head 223
neck 147
post-mortem see postmortem injuries
priority and order 562, 563
semi-sharp force 255
sequelae 216–28
sexual 148
sharp force 255, 313–23
see also specific injuries
intracranial pressure, raised, in internal haemorrhage 219–21, internal examination in forensic intellectual deficits, and driving 1003–4 insurance fraud 781–2 intracerebral haemorrhage 301, intimate partner violence intervertebral disc haemorrhage interstitial pneumonia 619, Interpol Disaster Victim Identification international guidelines 34–45 international courts 19 international commissions on missing persons 21 international courts 19 expert witnesses 25 International Crime Court 19 International Crime Tribunal of former Yugoslavia (ICTY) 18, 19 International Criminal Tribunal for Rwanda 19 international guidelines 34–45 autopsy standards 34–6 laboratory standards 36–7 Interpol Disaster Victim Identification Forms 141 interstitial pneumonia 619, intervertebral disc haemorrhage 240 intimate partner violence see domestic violence intracerebral haemorrhage 301, 301, 621–3 causes 622 characteristics 622 diagnosis 622 shooting incidents 342 sites and sources 623 and traffic accidents 1119 intracranial haemorrhage 271–2, 272–5, 293–6, 294, 295, 296 contusion index 300 see also specific types intracranial pressure, raised, in children 706–7 intracranial vessels injuries to 296–7 mechanically induced alterations 297 intracranial volume 284–5 intramyocardial haemorrhage 490 intrathoracic pressure, raised 373–4 intravenous drug users 579, 579 ion trapping 860 Ireland, statutory limits for alcohol levels 1062 iris, pharmacological excitability 78, 78 iron deficiency 189 poisoning 848, 855 sample requirements 853 Iscan method of age estimation 181–3, 182 ischaemic heart disease 600–5, 602–5 coagulative myocytolysis 604 contraction band necrosis 603, 607 evolution of infarct necrosis 604 infarct size 601 polymorphonuclear leukocytes 602–3, 603 postinfarction cardiac rupture 605, 606 and traffic accidents 1118 wavy fibres 603 ischaemic ulcers 769 ischii pubic ramus 178, 178 ISO/IEC 17025 37–44 clinical forensic medicine 44 forensic DNA laboratories 37–9 accommodation and environmental conditions 38 analytical testing, calibration and validation 38 documentation 36 measurement traceability 38 personnel qualifications 37–8 quality assurance 38 reporting results 38–9 samples 38 forensic pathology 43–4 forensic toxicological laboratories 39–43 accommodation and environmental conditions 40–1 analytical testing, calibration and validation 41 documentation 43 personnel qualifications 39–40, 39–40, 40 quality assurance 42 reporting results 42–3 samples 41–2, 42 isobutanol, in alcoholic beverages 910 isocyanates 460 isomorphen/isomegalen diagram 113–14 isopropanol 912–13, 913 analysis of 903 blood levels 914 concentration-time profile 912 as marker of alcohol abuse 1102 metabolism 906 physicochemical properties 901 poisoning 914 toxicity 906 Italy diminished responsibility 822 insanity standards 820 rehabilitation and security 823 statutory limits for alcohol levels 1062 town charts 7–8 Japan competence to stand trial 818 diminished responsibility 822 insanity standards 821 Joule burns 479–80, 481 jugular vein compression 373 Justinian enactments 7 juvenile pornography 697 Kastle–Meyer test 1144, 1146 Kawasaki syndrome 663 Kelley–Seegmiller syndrome 778 Kempe, Henry 725 ketamin 5 245 Kerley–Ubelaker method 185 ketamine 584, 585, 696 ketazolam 934 ketoacylco, alcoholic 569–70, 571, 577 ketone bodies 570, 571, 635–6, 913, 913 ketotic coma 633 Khmer Rouge Tribunal 19, 25 kicks 727 kidney blunt force trauma 282 multiple organ failure 232–3, 233 specimen collection 859 weight loss in starvation 497 Kirchhofrosen 79, 79 kobold injuries 526–7 Kosovo 20, 21 Krebs’ cycle 570, 571 labelling of laboratory samples 36 labial fusion 689 laboratory standards 36–7 anticontamination precautions 37 assessment 36, 38 equipment and measurement 37, 38, 41 evaluation and interpretation 37, 38, 39, 42–3 ISO/IEC 17025 37–44 labelling and documentation 36, 43 proficiency testing 37 samples 36, 38, 41 validation 36–7, 38, 41
labour law, personal injury assessment 1249–50
dependences 1250
permanent impairment 1250
temporary partial professional impairment 1250
temporary total professional impairment 1250
Lacassagne, Alexandre 11
lacerations 254, 265–6, 266
anal 691
brain 290
children 305–6
elder abuse 764
genitalia 687, 692
scalp 266
lactic acid 634–5, 636
Traub's calculation 634–5
laminin
leg injuries
lead pellets, deformed 357
legal highs 831
legal competency 816
legal capacity, older people 767
lead 948–9
exposure 948–9
poisoning 70, 849, 855
from retained bullets 361
reference concentrations 949
sampling requirements 853
toxicity 949
toxicokinetics 949
lead pellets, deformed 357
leg injuries
railway accidents 1122
road traffic accidents 1109, 1111
legal capacity, older people 767
legal competency 816
legal highs 831
legal issues 203–7, 1207–37
actus rea (act/action) 204
apportioning liability 206
assisted suicide and medically assisted suicide 1224–8
organised suicide 1227–8
precedents 1226–7
terminology 1225–6
causation, liability and time 204–5
child abuse 724
clinical autopsy 149
competency see competency definitions 203
diminished responsibility 205–6
display of human remains 1232–5
drug addiction 577–8
expert evidence 562–95
forensic psychiatry 813
handling of corpses 1232–6
human rights 18
infanticide 206
injuries and causation 204
liability 203
medical errors 553
medical treatment 1207–15
as bodily harm/assault 1208
confidentiality 1213–15
medical indication and standards 1209–10, 1209, 1209
persons involved 1207–8
self-determination 1210–13
mens rea (intent) 203–4
temporal capacity 205
murder and manslaughter 205
personalised medicine 1215–24, 1217
areas of application 1215–16
challenges 1216
confidentiality 1219
data protection 1219
definition 1215–16
freedom of therapy 1217–18
genetic testing 1218–19
health insurance law 1220–1
informed consent 1218
research 1221–3
punishment for crime 206
research 17
research on corpses 1228–32
sexual abuse 697
thin-skull rule 206
toxicology 831–9
Lehmendin test 184
Lemendin test
Lehrbuch der Gerichtlichen Medizin 12, 13
Lovejoy's method of age estimation 183–5
Lovejoy's method of age estimation
hypothecia 474, 475
liquid chromatography–mass spectrometry 868, 883
liquid ecstasy see gamma-hydroxybutyrate
lithium 584, 587
poisoning 848
sample requirements 853
liver
alcohol effects 570
cirrhosis 571–2
fatty degeneration 570–1, 571
blunt force injuries 279, 280
multiple organ failure 232
sepsis 230–1, 231
specimen collection 859
weight loss in starvation 497
liver function tests 637–8
ligidity 78–80, 79, 79
discoloration 80
hypothermia 80, 472
shift with movement 80
stages of 80–1
time course 81
water-line 486
livor mortis 52, 72
poisoning 70
IDS 658
lobar pneumonia 572, 576
long QT syndrome and SIDS 650
and sudden infant death 665
and traffic accidents 1119
lorazepam, and driving fitness 1088–9, 1089
lorzatadine, and driving fitness 1094
lorazepam
and driving fitness 1090, 1091
toxicological analysis 1083, 1084
lormetazepam, and driving fitness 1088, 1089
love bites 260
Lovejoy's method of age estimation 183–5,
lower limit of quantification (LLOQ) 41
INDEX

1276

lowest observed adverse effect level (LOAEL) 948
Lubanga, Thomas 19
Lucilia caesar 115
Lucilia sericata (blow fly) 110, 110, 111–12, 111, 112, 114–15, 115
Ludes, Bertrand 10
luminol test 176, 1144
lungs
adult respiratory distress syndrome 227
drowning victims 417, 418, 418, 419, 666
emphysema 666
floating test 242, 510
multiple organ failure 232
neurogenic pulmonary oedema 228
pneumonia 63, 227
respiratory lung 227
sepsis 229–30, 230
specimen collection 859
trauma 227
blunt force 277
penetrating injury 146
volume 429, 430
weight 418
see also pulmonary disease; respiratory tract
lymphocytic myocarditis 607–10
lysergic acid diethylamide (LSD) 584, 585, 931
maceration 117
drowning victims 414, 415
of fetus 509–10, 510
McNaughton’s rule see M’Naghten’s rule
macrophages, immunohistochemical
markers 245
macular degeneration 1028
MADIT (Multicenter Automatic Defibrillatory Implantation Trial) II trial 1018
Mafia-related deaths 587–93
AK-47s 590–1, 591
ambushes and massacres 592–3, 593
caprettamento 591–2
hangings 591–2
historical aspects 587–9
ritual homicides 591–2
role of women in Mafia system 589–90
sawn-off shotguns 590, 590
strong acids 592
symbolism in 589
maggots, collection of 861
magnetic resonance imaging (MRI) 156
males see men
malformations, and sudden infant death 663–4
malnutrition 496
ever abuse 771
protein-calorie 499
protein-energy 499, 500
mandibular fractures 270–1
manganese, sample requirements 853
manner of death 65–7, 66, 163
manoxol-molybdenum 1144
manslaughter 205
marijuana see delta-9-tetrahydrocannabinol
mass disasters
classification 192–3, 193
closed 193
open 192–3
transport-related 1130–4
cause and time of death 1133–4
doctor’s task 1131
examination of bodies and body parts 1131
forensic medical examination 1131–4
victim identification 192–200
mass graves 19–21, 19–21
mass spectrometry 868
maternal death in gestation 516–24
iatrogenic 522–3
mortality rate 516
pregnancy-related death 517–22
pregnancy-related risks 516–17, 517, 517
unrelated to pregnancy 523
MCP-1 249
MDMA see amphetamines
meconium 508
medazepam 934
medical diagnosis, criminal relevance 1208
Medical Error Reporting System (MERS) 548
medical errors 545–61
autopsy 558–9
blood transfusion errors 552–3, 553, 554
bodily damage caused 550
cause of accusation 551
causes of preliminary proceedings 551
classification 551
Clinical Liaison Service 559
confirmed cases 552
definitions 545–6, 546
diagnosis of disease 549
drug-associated deaths 556–8, 557, 557
duration and site of treatment 552
epidemiology 546–58
data from arbitration committees 548–50, 548–50, 550
data from Institutes of Forensic Medicine 550–2, 551, 552
exitus in tabula (death on operating table) 553–6, 555, 556
incidence 546, 547
investigation 558–9
mechanical device-related 558
medical disciplines involved 549, 551
medicolegal aspects 553
most frequent mistakes 549, 553
occupational group 552
outcome 552, 552
patient complaints 549
medical ethics 1213
medical malpractice 1209
medical treatment, legal relevance 1207–15
as bodily harm/assault 1208
confidentiality 1213–15
medical indication and standards 1209–10, 1209, 1209
persons involved 1207–8
self-determination 1210–13
medically assisted suicide 1224–8
medicolegal autopsy 139, 140–9
diving accidents 435–8
diatri test 437
external examination 435–6
forensic imaging 437, 439
gas detection 437–8
histology 437
internal examination 436–7
molecular autopsy 437
toxicology 437
elder abuse 768, 769
external examination 140–3
conduct of 141–3
state of corpse 141
internal examination 143–7
evisceration 144–5, 144
mass disasters 1131–4
special procedures 147–9
newborn children 148–9
trauma 147–8
see also specific body parts
medicolegal research 17
Mees’ lines 70
mefloquine, and driving fitness 1095–6
Megaselia scalaris (scuttle fly) 111, 114–15, 115
melatonin 934
chemical structure 940
melatonin receptor antagonists 940
men
age estimation 181, 182
sex determination 176–8, 177
meningitis, and sudden infant death 662–3
mens rea (intent) 203–4
mental capacity 205
lack of 1211–12
mental competence 815–16
consent to treatment 817
paternity testing 1165–72
autosomal markers 1166, 1167
biostatistics 1170–1
male and female lineage markers 1166–70, 1168, 1169, 1170
quality assurance and ethical considerations 1171–2
pathological markers 186, 188
patient controlled analgesia (PCA) 558
PCR amplification see polymerase chain reaction amplification
PEACE (Prevention of Events with Angiotensin Converting Enzyme Inhibition) trial 1014
pelvis fractures 280
sex determination 178
pen guns 332
pentachlorophenol 971
pentobarbital 934, 935
percutaneous coronary interventions 1014
perianal bruising 690
perianal erythema 690, 693
pericardial fluid 631, 632
specimen collection 860
periportal haematoma 263, 263
peritoneal dialysis 850
permafrost bodies 95, 97
personal injury assessment 1241–52
administrative law 1250–1
aim of 1242
civil law 1247–9
dependences 1249
partial temporary functional deficit 1248
permanent aesthetic damage 1249
permanent functional deficit 1248–9
permanent professional repercussions 1248
permanent repercussions on sexual activity 1249
permanent repercussions on sporting and leisure activities 1249
quantum doloris 1248
temporary partial professional repercussions 1247–8
temporary total professional repercussion 1247
total temporary professional deficit 1248
criminal law 1246–7
forensic medical reports 1244–51
general methods 1243–4
historical aspects 1241
labour law 1249–50
dependences 1250
permanent impairment 1250
temporary partial professional impairment 1250
temporary total professional impairment 1250
reparation 1242
role of forensic medicine expert 1243
personalised medicine, legal issues 1215–24
areas of application 1215–16
challenges 1216
confidentiality 1219
data protection 1219
definition 1215–16
freedom of therapy 1217–18
genetic testing 1218–19
health insurance law 1220–1
informed consent 1218
research 1221–3
personality disorders, and self-harm 782–7
borderline 783, 783
combined/mixed patterns 785–6, 785, 786
evaluation and assessment 787
forensic medical approach 784–5
intermediate group 783–4, 784
multidisciplinary procedure 785
personnel, qualifications
forensic DNA laboratories 37–8
forensic toxicological laboratories 39–40, 39–40
Peru 25
pesticides 966–72
insecticides 967–9
rodenticides 971–2
petechial haemorrhage 142, 239, 260
asphyxiation 380–1, 380, 381
hanging 240, 384–5
ligature strangulation 390, 391
manual strangulation 393
SIDS 658, 659
see also contusions
pH, and absorption 893
Phadbas test 1146
phase I metabolic enzymes 895–6
phase II metabolic enzymes 896
phenacyclidine 584, 585
toxicological analysis 1083
phenobarbital 934, 935
toxicological analysis 1083
phenolphthalein 1144
phenotype 1163–4
phenytoin poisoning 849
toxicological analysis 1083
phogene 956–7
respiratory toxicity and exposure threshold 962
phosphatidylethanol 1100, 1101, 1102
phospine 957
respiratory toxicity and exposure threshold 962
photodiode array detector 868
photogrammetry 259
photography 199
non-accidental head injury 722
phthalimides 971
physical activity after injuries 562–5
abdominal injuries 564–5
chest injuries 564, 564
definition 562–3
head injuries 563
injuries to extremities 565
neck injuries 563–4
physical neglect see neglect
physical restraint 528–38
auto-erotic 526
elder abuse 765
excited delirium 534–5
extrinsic factors 530–4
in-custody deaths 528–30, 529
death certificate 536–7
investigation of 535–6
intrinsic factors 534
neck holds 530–2, 531, 532
options for 530
restraint asphyxiation 528, 532–4, 532
torture 30–1
physical violence 746
threats of 746
Physicians for Human Rights 23
piercings 142, 778
Pistols 330, 227
Pink teeth 414
pistols 330, 330
pituatory gland, weight loss in starvation 497
placenta previa 505
planimetric radiographic methods 794–5
plaque jaune 273
plasma, specimen collection 857–8
plasma elimination half-life 891
plasmapheresis 850
plastic bag asphyxiation 409–11, 410
pleural cavity, blood within 220
pleural exudate
drowning victims 418
specimen collection 860
PMI see postmortem interval
pneumochaematothorax 1112
pneumonia 63, 227, 616–19, 618
interstitial 619
lobar 572, 576
and sudden infant death 662
pneumothorax 224–5, 224, 227, 403–4
poisoning 69–70, 69–70, 70, 254, 845–65
child abuse 737, 737
clinical features 846
clinical and laboratory liaison 850
diagnosis 845–56
infants 668
interpretation of results 854–6, 854, 855
investigations 847, 848
natural poisons 961–6
samples and sampling 850–3
general requirements 850–2, 851
postmortem collection 852–3
trace elements 852, 853
treatment 847–8, 849, 850, 850
see also drug addiction; toxicology; and specific poisons
Poland, statutory limits for alcohol levels 1062
police custody, deaths in see in-custody deaths
Polilight 1144
polymerase chain reaction (PCR) amplification 1149–51, 1151
polymorphisms in drug metabolism 895–6
STR 1148–9
polymerase chain reaction (PCR) amplification 1149–51, 1151
evolution 1149–51
PCR 1149–51
population genetics 1155–7
population genetics 1156
population genetics 1157
population genetics 1158
populations 1163
potassium 640
potassium 640
potency 103–4
Praktisches Handbuch der Gerichtlichen Medizin 10
pregnancy
Arias Stella phenomenon 518, 519
extra-uterine 517–18, 517, 518
gestational diabetes 1037
maternal death during 516–24
and partner abuse 748
physiological risks 516–7, 517, 517
uterine fundus level 517
pregnancy-related death 517–22
early pregnancy 517–21
abortion 518–21
extra-uterine pregnancy 517–18, 517, 518
preservation processes 95
pressure sores, drug addicts 584
pressure stasis 374
pressure sores, drug addicts 584
preservation processes 95
pressure sores, drug addicts 584
pressure ulcers 769
Pretty, Diane 1226–7
prevalence 1044
preventive detention 823
postmortem injuries 116–25
animal predation 95, 95, 121, 122
bodies recovered from water 117, 119, 120, 120
drying of mucosal surfaces and eye 90–1, 90, 116, 117
drowning victims 123–4
fire victims 120, 121
handling, transportation and storage of body 123, 123
heat damage 120, 121, 455, 457, 457–9, 457, 460
incised wounds 255
maceration 117
psuedoligature marks 121–2, 123
putrefaction mimicking 116–17, 118
regurgitation of gastric juice 123, 124
resuscitation procedures 123–5, 124–5
urine leakage 124
vibices 122, 123
postmortem interval (PMI) 113–14
accumulated degree-days/degree-hours method 114, 175
determination of 175–6, 176
larval age 113–14
modelling of insect development 114
postmortem mutilation 565–6, 565, 566
defensive 565, 565
definition 565
epidemiology 565
findings 565–6, 565, 566
offensive 566
post-traumatic stress disorder (PTSD) 32, 747, 753
potassium 640
in vitreous humour 103–5, 106
practitioners 23
Praktisches Handbuch der Gerichtlichen Medizin 10
pregnancy
INDEX

1281

prison deaths in 68
self-harm in 780
prodrugs 874–5, 875
professional standards 1209–10
proficiency testing 37
prognathism 185
propane 962
2-propanol 901
n-propanol 901
in alcoholic beverages 910
physicochemical properties 901
propellor injuries 117, 119, 120, 255
propxyphenine, toxicological analysis 1083
propylene glycol 960
prostheses
puncture marks 141–2
punch drunk syndrome 301
puntual injury 116–17, 118
morphological changes 92, 93, 93
progression of 93
and specimen collection 862
and time of death 107–8, 109
transudates 92, 117, 118
and water temperature 440, 442, 442
pyrethroid insecticides 969
pyridine 961
respiratory toxicity and exposure threshold 962
pyritothyldion 938–9, 938
Quaestiones medico-legales 9–10, 9
quality management
disaster victim identification 198–9
forensic DNA laboratories 38
forensic toxicological laboratories 42
quantum doloris 1248
race see ethnicity
radiation 254
exposure in X-ray examinations 799–800
radiology see forensic imaging
railway accidents 1121–7,
1122
injury analysis 1123–4, 1123
injury patterns 1125–6, 1125
person between/on rails 1126
person in upright position 1125, 1125
person lying outside track 1126
postmortem surveys 1124–5, 1124
train speed and injury pattern 1123
ramelteon 934, 940
and driving fitness 1089
rear-end collisions 1116
rebreathing accidents 409, 410
recoil 336
recovery of remains 172–5, 173, 174
rectal temperature 99, 101
death time interval 101
environmental temperature 99
measurement 99
re-epithelialisation 248
Reference Dose (RfD) 948
reflex anal dilatation 691
reflex syncope 1018–19
refractive errors and driving fitness 1024–5
rehabilitation of criminals 822–4
religious objections to autopsy 154
remaceide, and driving fitness 1095
renal clearance 891
renal failure 63, 638–9, 638
research 1221–3
Convention on Human Rights and Biomedicine 1222
Convention for the Protection of Human Rights and Fundamental Freedoms 1221
on corpses 1228–32
data handling 1223
highly vulnerable people 1223
human rights 25–6
medicolegal 17
sample handling 1223
resistance 478, 478
respiration, vital reactions 241–3, 242, 243,
243
respiratory lung 227
respiratory orifices, obstruction of 404–9
larynx 406–7, 407
mouth and nose 404–6, 405
trachea and bronchi 407–9, 408
respiratory paralysis 223, 404
respiratory tract
obstruction of 396–404
burking 398–9
head-down position 400–2, 401
orthograde suspension 402
pneumothorax 224–5, 224, 277, 403–4
positional asphyxia syndrome 399–400
thoracic compression 396–8, 396, 397
unstable thorax 402–3
SIDS 660
thermal injuries 460
toxicity of gases and solvents 962
see also specific parts
restraint see physical restraint
restraint asphyxiation 528, 532–4, 532
restrictive cardiomyopathy 612
resuscitation injuries 123–5, 124–5
reticulin fibres, staining methods 289
retinal haemorrhage
birth-related 719
in children 702, 709–10, 709
shaken baby syndrome 307–8
retnitis pigmentosa 1027–8
reverse transcriptase polymerase chain reaction (RT-PCR) 250
revolvers 329–30, 330
rib fractures 224, 247, 276, 277
child abuse 710, 710, 731
rifles 188
ricochet 336–7
rifles 330, 330
right not to know 1213
right ventricular blood 631
rigor mortis 52, 72, 81–3, 82, 83
causes 82
re-establishment of 83
time course 82
vs. cold stiffening 81
RITA 3 (Randomised Intervention Trial of unstable Angina 3) study 1013
ritanserin, and driving fitness 1091, 1091
ritual homicides 591–2
RM 3/1 245
road traffic accidents 1108–17
abbreviated injury scale 1109
accident proneness 1120–1
car to car collisions 1113–17, 1115
frequency 1114
front-end collisions 1114–15, 1115
rear-end collisions 1116
seat belt injuries 262, 1114–15, 1115
side collisions 1115–16
car to pedestrian collisions 1108–13, 1109–13
impact 1108, 1110
loading 1108, 1110, 1111, 1112
lower leg injuries 1109, 1111
overrunning 1112–13, 1114
shoe heel abrasions 1111
shuffling off 1108, 1110, 1111–12, 1113
trace patterns on car 1110
tyre tread marks 261, 1113
two-wheeler vehicle to car collisions 1116–17, 1116
Roadside Testing Assessment (ROSITA) project 1075
rodenticides 971–2
anticoagulants 971–2
strychnine 972
Rohypnol see flunitrazepam
Rokitansky, Carl von 12
Romano–Ward syndrome 665
rotational impact deceleration brain injury 713
rotational (inertial) brain injury 712–13, 712
midbrain shearing 713
vascular shearing 712–13
white matter shearing 713
rubbing alcohol see isopropanol
erupatadine, and driving fitness 1094, 1095
ruthenium tetroxide 1144
scab
blunt force injuries 291–2, 291
haematoma 246
lacerations 266
scarification 778
SCD-HeFT (Sudden Cardiac Death in Heart Failure Trial) study 1018
schizophrenia 779
school violence 751–6
motives and reasons 753
prevention and intervention 753–4
statistics 752–3
sciatic notch 178
scleral desiccation 116, 117
Scotland 16–17
Scottish Index of Multiple Deprivation (SIMD) 703, 704
scuttle fly (Megaselia scalaris) 111, 114–15, 115
sea lice (Natalolana woodjonesi) 119, 120
seat belt injuries 262, 1114–15, 1115
secobarbital, toxicological analysis 1144
sedatives and hypnotics 932–43
pharmacokinetics 933, 934
pharmacodynamics 932
narcotic (sedative/hypnotic) withdrawal 933
self-burning 780
self-burning see suicide
self-made bombs 364
self-neglect 766
semi-sharp force injuries 255
see also specific injuries
sepsis 227–32
adrenal gland 232, 232
brain 231–2, 231
heart 230, 230
liver 230–1, 231
lung 229–30, 230
pathology 229
post-abortion 520
severe 229
SIMS 227–9, 229
spleen 231
septic shock 229, 230
septaemia, and sudden infant death 663
septopyaemic abscess
brain 231
heart 230
spleen 231
serial killers 541
serotonin syndrome 586, 864–5
serum, specimen collection 857–8
sex determination 177–9, 178
sexual abuse 681–701
checklist 700
conditions mistaken for 698
examination of victim 681–95
anogenital lesions 683–94, 684–6, 687–91, 692, 693

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>extragenital lesions</td>
<td>694–5</td>
</tr>
<tr>
<td>general procedures</td>
<td>681–3</td>
</tr>
<tr>
<td>findings caused by other conditions</td>
<td>698</td>
</tr>
<tr>
<td>incidence</td>
<td>681</td>
</tr>
<tr>
<td>interpretation of medical findings</td>
<td>697–9, 698</td>
</tr>
<tr>
<td>juvenile pornography</td>
<td>697</td>
</tr>
<tr>
<td>legal outcome</td>
<td>697</td>
</tr>
<tr>
<td>older people</td>
<td>765</td>
</tr>
<tr>
<td>toxicological analysis</td>
<td>696–7</td>
</tr>
<tr>
<td>sexual homicide</td>
<td>539–44</td>
</tr>
<tr>
<td>shaken impact syndrome</td>
<td>711</td>
</tr>
<tr>
<td>shackling</td>
<td>30, 31</td>
</tr>
<tr>
<td>sexually transmitted infections</td>
<td>695–6</td>
</tr>
<tr>
<td>sexual violence</td>
<td>746, 748</td>
</tr>
<tr>
<td>sexual trauma</td>
<td>803</td>
</tr>
<tr>
<td>sexual maturation</td>
<td>148</td>
</tr>
<tr>
<td>sexual maturation</td>
<td>803</td>
</tr>
<tr>
<td>sexual violence</td>
<td>746, 748</td>
</tr>
<tr>
<td>sexual trauma</td>
<td>148</td>
</tr>
<tr>
<td>sexual trauma</td>
<td>803</td>
</tr>
<tr>
<td>sexual trauma</td>
<td>803</td>
</tr>
<tr>
<td>sexual violence</td>
<td>746, 748</td>
</tr>
<tr>
<td>date rape</td>
<td>837</td>
</tr>
<tr>
<td>drug-facilitated</td>
<td>837</td>
</tr>
<tr>
<td>evidence collection kit</td>
<td>1146</td>
</tr>
<tr>
<td>threats of</td>
<td>746</td>
</tr>
<tr>
<td>sexually transmitted infections</td>
<td>695–6</td>
</tr>
<tr>
<td>adults</td>
<td>696</td>
</tr>
<tr>
<td>children</td>
<td>695–6</td>
</tr>
<tr>
<td>older women</td>
<td>765</td>
</tr>
<tr>
<td>shacking</td>
<td>30, 31</td>
</tr>
<tr>
<td>cause of death</td>
<td>308</td>
</tr>
<tr>
<td>diagnosis</td>
<td>710–11</td>
</tr>
<tr>
<td>neurological classification of injuries</td>
<td>711</td>
</tr>
<tr>
<td>pathologies not causing</td>
<td>721</td>
</tr>
<tr>
<td>retinal bleeding</td>
<td>307–8</td>
</tr>
<tr>
<td>subdural haemorrhage</td>
<td>307, 307</td>
</tr>
<tr>
<td>shaken impact syndrome</td>
<td>711</td>
</tr>
<tr>
<td>shallow water blackout in divers</td>
<td>431</td>
</tr>
<tr>
<td>shark bites</td>
<td>120</td>
</tr>
<tr>
<td>sharp force injuries</td>
<td>254, 255, 513–23</td>
</tr>
<tr>
<td>abdomen</td>
<td>321–2, 321, 322</td>
</tr>
<tr>
<td>brain</td>
<td>713</td>
</tr>
<tr>
<td>cause of death</td>
<td>314–15, 315</td>
</tr>
<tr>
<td>chest</td>
<td>321, 321, 322, 564, 564</td>
</tr>
<tr>
<td>crime scene</td>
<td>315–16, 315, 315, 316</td>
</tr>
<tr>
<td>extremities</td>
<td>320–1, 321</td>
</tr>
<tr>
<td>head</td>
<td>319–20</td>
</tr>
<tr>
<td>homicidal</td>
<td>319</td>
</tr>
<tr>
<td>medicolegal findings</td>
<td>316–22</td>
</tr>
<tr>
<td>external investigation</td>
<td>316</td>
</tr>
<tr>
<td>individual stab wounds</td>
<td>316–18, 317, 318</td>
</tr>
<tr>
<td>number of lesions and patterns</td>
<td>318–19, 318</td>
</tr>
<tr>
<td>wound track</td>
<td>318</td>
</tr>
<tr>
<td>neck</td>
<td>320, 320</td>
</tr>
<tr>
<td>occurrence</td>
<td>314</td>
</tr>
<tr>
<td>prevention</td>
<td>322</td>
</tr>
<tr>
<td>self-inflicted</td>
<td>319, 321</td>
</tr>
<tr>
<td>suicidal</td>
<td>319</td>
</tr>
<tr>
<td>weapon types</td>
<td>314, 314</td>
</tr>
<tr>
<td>see also specific injuries</td>
<td></td>
</tr>
<tr>
<td>shear stress</td>
<td>215</td>
</tr>
<tr>
<td>shearing/rotational brain injury</td>
<td>712</td>
</tr>
<tr>
<td>shell fractures</td>
<td>214</td>
</tr>
<tr>
<td>shock kidney</td>
<td>233, 240</td>
</tr>
<tr>
<td>shooting incidents</td>
<td>141, 147, 254, 256</td>
</tr>
<tr>
<td>accidental</td>
<td>359–60</td>
</tr>
<tr>
<td>discharge by mistake</td>
<td>360</td>
</tr>
<tr>
<td>gun cleaning accidents</td>
<td>360</td>
</tr>
<tr>
<td>hunting accidents</td>
<td>360</td>
</tr>
<tr>
<td>angles of gunshot</td>
<td>351–2, 352</td>
</tr>
<tr>
<td>backspatter</td>
<td>352–3, 353</td>
</tr>
<tr>
<td>victim</td>
<td>351, 359</td>
</tr>
<tr>
<td>ballistics</td>
<td>328–61, 329</td>
</tr>
<tr>
<td>billiard ball effect</td>
<td>356–7, 357</td>
</tr>
<tr>
<td>bone contact</td>
<td>340</td>
</tr>
<tr>
<td>deformation and fragmentation</td>
<td>340, 341</td>
</tr>
<tr>
<td>deformed lead pellets</td>
<td>357</td>
</tr>
<tr>
<td>energy deposit and transfer</td>
<td>340</td>
</tr>
<tr>
<td>head injuries</td>
<td>340–2, 342</td>
</tr>
<tr>
<td>high velocity missiles</td>
<td>340</td>
</tr>
<tr>
<td>mechanisms of injury</td>
<td>337–8, 338</td>
</tr>
<tr>
<td>missile–tissue interaction</td>
<td>338–9, 339</td>
</tr>
<tr>
<td>sawn-off shotguns</td>
<td>357</td>
</tr>
<tr>
<td>shock wave</td>
<td>338</td>
</tr>
<tr>
<td>yawing</td>
<td>336–7, 339, 340</td>
</tr>
<tr>
<td>clothing and textiles</td>
<td></td>
</tr>
<tr>
<td>entrance wounds</td>
<td>345–9, 346–9</td>
</tr>
<tr>
<td>fibres in wound</td>
<td>351</td>
</tr>
<tr>
<td>position of victim</td>
<td>354</td>
</tr>
<tr>
<td>CT imaging</td>
<td>157, 217</td>
</tr>
<tr>
<td>defence injuries</td>
<td>359</td>
</tr>
<tr>
<td>direction of gunshot</td>
<td>350–1</td>
</tr>
<tr>
<td>backspatter of skin</td>
<td>351</td>
</tr>
<tr>
<td>bone contact</td>
<td>351, 351</td>
</tr>
<tr>
<td>suicide vs. homicide</td>
<td>358–9</td>
</tr>
<tr>
<td>textile fibres</td>
<td>351</td>
</tr>
<tr>
<td>see also entrance wounds, below</td>
<td></td>
</tr>
<tr>
<td>entry wounds</td>
<td>345–9, 346–9</td>
</tr>
<tr>
<td>dynamic vs. static situations</td>
<td>354</td>
</tr>
<tr>
<td>entrance wounds</td>
<td>345–7, 346, 348</td>
</tr>
<tr>
<td>atypical</td>
<td>350</td>
</tr>
<tr>
<td>morphology and range of fire</td>
<td>356, 357</td>
</tr>
<tr>
<td>prior exposure</td>
<td>359</td>
</tr>
<tr>
<td>sites of</td>
<td>357–8</td>
</tr>
<tr>
<td>epidemiology</td>
<td>360</td>
</tr>
<tr>
<td>exit wounds</td>
<td>347, 347</td>
</tr>
<tr>
<td>atypical</td>
<td>350</td>
</tr>
<tr>
<td>expert evidence</td>
<td>563</td>
</tr>
<tr>
<td>forensic reconstruction</td>
<td>344–50</td>
</tr>
<tr>
<td>methods</td>
<td>345</td>
</tr>
<tr>
<td>textiles and skin</td>
<td>345–9, 346–9</td>
</tr>
<tr>
<td>geometry of</td>
<td>359</td>
</tr>
<tr>
<td>head</td>
<td>217, 298, 299</td>
</tr>
<tr>
<td>incapacitation</td>
<td>342–4, 354</td>
</tr>
<tr>
<td>concussion</td>
<td>344</td>
</tr>
<tr>
<td>cerebral pressure</td>
<td>344</td>
</tr>
<tr>
<td>delayed</td>
<td>344</td>
</tr>
<tr>
<td>immediate</td>
<td>343</td>
</tr>
<tr>
<td>mechanisms</td>
<td>343</td>
</tr>
<tr>
<td>psychological factors</td>
<td>344</td>
</tr>
<tr>
<td>rapid</td>
<td>344</td>
</tr>
<tr>
<td>number of gunshots</td>
<td>357</td>
</tr>
<tr>
<td>propellant burns</td>
<td>256</td>
</tr>
<tr>
<td>range of fire</td>
<td>347–50</td>
</tr>
<tr>
<td>contact wounds</td>
<td>256, 258, 348</td>
</tr>
<tr>
<td>distant wounds</td>
<td>349</td>
</tr>
<tr>
<td>gunshot residues</td>
<td>347–8, 347</td>
</tr>
<tr>
<td>intermediate-range wounds</td>
<td>348–9</td>
</tr>
<tr>
<td>near-contact wounds</td>
<td>348</td>
</tr>
<tr>
<td>shot pattern</td>
<td>356</td>
</tr>
<tr>
<td>suicide vs. homicide</td>
<td>358</td>
</tr>
<tr>
<td>sequence of gunshots</td>
<td>354</td>
</tr>
<tr>
<td>shooter</td>
<td>352–4</td>
</tr>
<tr>
<td>backspatter</td>
<td>352–3, 353</td>
</tr>
<tr>
<td>injuries and DNA transfer</td>
<td>353</td>
</tr>
<tr>
<td>position of</td>
<td>353–4</td>
</tr>
<tr>
<td>shooting hand</td>
<td>352, 359</td>
</tr>
<tr>
<td>steadying hand</td>
<td>352, 359</td>
</tr>
<tr>
<td>sooting</td>
<td>256, 349, 359</td>
</tr>
<tr>
<td>spine</td>
<td>303</td>
</tr>
<tr>
<td>subcutaneous gas expansion</td>
<td>348, 349</td>
</tr>
<tr>
<td>suicide or homicide</td>
<td>357–9</td>
</tr>
<tr>
<td>victim</td>
<td></td>
</tr>
<tr>
<td>gun inside hand</td>
<td>359</td>
</tr>
<tr>
<td>position of</td>
<td>354</td>
</tr>
<tr>
<td>weapon</td>
<td>see firearms</td>
</tr>
<tr>
<td>see also</td>
<td></td>
</tr>
<tr>
<td>fire</td>
<td></td>
</tr>
<tr>
<td>short tandem repeats see STRs</td>
<td></td>
</tr>
<tr>
<td>shotguns</td>
<td>330–1, 330</td>
</tr>
<tr>
<td>ammunition</td>
<td>334–5, 335</td>
</tr>
<tr>
<td>shoulder pin restraint</td>
<td>531</td>
</tr>
<tr>
<td>side collisions</td>
<td>1115–16</td>
</tr>
<tr>
<td>side effects see adverse drug reactions</td>
<td></td>
</tr>
<tr>
<td>SIDS see sudden infant death syndrome</td>
<td></td>
</tr>
<tr>
<td>signal guns</td>
<td>332</td>
</tr>
<tr>
<td>silencers</td>
<td>360–1</td>
</tr>
<tr>
<td>silver, sample requirements</td>
<td>853</td>
</tr>
<tr>
<td>silver nitrate</td>
<td>1144</td>
</tr>
<tr>
<td>silver stains</td>
<td>289</td>
</tr>
<tr>
<td>Simon's haemorrhage</td>
<td>240</td>
</tr>
<tr>
<td>simulated injuries</td>
<td>780</td>
</tr>
<tr>
<td>single nucleotide polymorphisms see SNPs</td>
<td></td>
</tr>
<tr>
<td>sinuses, drowning victims</td>
<td>419</td>
</tr>
<tr>
<td>SIRS see systemic inflammatory response</td>
<td></td>
</tr>
<tr>
<td>syndrome</td>
<td></td>
</tr>
<tr>
<td>sixpenny bruises</td>
<td>262–3, 262</td>
</tr>
<tr>
<td>skeletal maturation</td>
<td>801–2</td>
</tr>
<tr>
<td>skeletal muscle</td>
<td>see muscle</td>
</tr>
<tr>
<td>skeletal survey in children</td>
<td>722</td>
</tr>
</tbody>
</table>
skeloton, examination of 147
skelotisation 94–5, 94, 173
dispersal of bone segments 173
skin
bleeding 69
blunt force injuries 258–66
abrasions 254, 258–9, 259, 260
contusions 254, 259–65, 260–5
lacerations 254, 265–6, 266
chromatic discoloration 414
drying 90–1, 90
maceration see maceration
multiple organ failure 234, 234
postmortem shrinking 257
putrefactive blisters 91, 117, 118
splitting in burned bodies 120, 121, 458
washer-woman’s 117, 119
wound healing 248, 764
skull, fire effects 461
skull fractures 145, 267–9, 267–70, 290
children 304–5, 710, 710, 719–21
forensic neuropathology 292–3, 292, 293
Puppe’s rule 267, 293, 562
spider’s web pattern 267, 293
sleep disorders, and driving fitness 1004–5, 1052–3
small intestine, floating test 242
Smith, Sydney 3, 7
Smith–Magenis syndrome 778
diminished responsibility 822
competence to stand trial 822
insanity standards 820, 821
South Africa
sooting of gunshot wounds 242
soot inhalation 242
sodium fluoride 879
solvents 958–61
occupational exposure 961, 962
respiratory toxicity 962
see also specific solvents
sot inhalation 242, 243, 244, 458, 459
sooting of gunshot wounds 256, 349
South Africa
competence to stand trial 818
diminished responsibility 822
insanity standards 820, 821
Spain, statutory limits for alcohol levels 1062
specialists in forensic medicine 15, 16
species, diagnosis of 176–7, 177
specimen collection 36
chain of custody 862
DNA analysis 38, 1143–6, 1144
forensic toxicological laboratories 41–2, 42, 856–62
handling 38, 41–2
labelling 36, 862
poisoning cases 850–3
postmortem 877–8, 878
storage 862, 881–2, 881
see also specific types
spectrophotometry 722, 868
spider’s web skull fracture 267, 293
spinal cord
autopsy 152, 152
examination 288
spinal injuries 275
cervical spine 288, 303–4
closed 303
mechanical 302–4, 304
open 303
vertebral fractures/dislocations 278–9, 279
spine
eparation 147, 288
forensic neuropathology 289–304
spleen
blunt force injuries 280, 281
drowning victims 419
sepsis 231
specimen collection 861
weight loss in starvation 497
ST-elevation acute coronary syndrome (STE-ACS) 1013
ST-elevation MI (STEMI) 1013
stab wounds see sharp force injuries
stain analysis 1143–65
body fluid identification 1146–7
DNA extraction and quantitation 1147–8
DNA typing 1148–55
evidence collection 1143–6, 1144
forensic DNA databases 1160–2
haplotypical markers 1157–60, 1158, 1159
novel techniques 1164–5
population genetics 1155–7, 1156
SNPs 1162–4, 1162
staining methods 289
stalking 746–7
standards
autopsies 34–6
laboratory 36–7
standing trial, competence to 817–18
starfish-induced injuries 120
starvation 254, 495–503
body weight loss 497, 497
cachexia 495, 496
classification 499–500, 500
clinical and autopsy findings 495–9
death from 500–2
immediate cause of death 500–2, 502
physical condition prior to death 500, 500, 500
duration of 500
elder abuse 771
energy requirements 496
malnutrition 496, 499
organ weight loss 497
status thymicolymphaticus 649
stereo vision 1029
sternum, blunt trauma 220
steroid abuse 584, 587
stillbirth 504–6
epidemiology 505
incidence 506
pathology 505–6
risk factors 505
stimulants 582, 583
in doping 974
storage
of bodies 123, 123
of insects 112
of specimens 862, 881–2, 881
thrombosis 1028–9
strangulation 383–96
auto-erotic 526
children 310–11, 310
hanging 142–3, 383–9
children 312
observations and time relationships 376, 376
petechial haemorrhage 240
infants 666
ligature 142–3, 258, 390–2
observations and time relationships 376
manual 258, 392–4
circumstances 392
definition 392
frequency/occurrence 392
pathomorphology 393–4, 393
marks 258
neck holds 394–6
see also asphyxiation
streak-like haematoma 261–2
stress cardiomyopathy 612–13, 613
stress proteins 249, 249
stretch marks 215
strontium, sample requirements 853
STRs 1151
data analysis 1151–3, 1152–4
new technologies for testing 1164–5
polymorphisms 1148–9, 1149
typing kits 1167
tear gas cartridges 335
teeth see forensic odontology
‘telephono’ torture 29
temazepam
and driving fitness 1089
fatal toxicity index 835
metabolism 938
pharmacokinetics 934
toxicoanalytical analysis 1083
temperature–time of death
nomogram 86–7, 86, 87, 90
temporal bone, haematoma
temporal muscle, haematoma 419
tenascin 245
tensile stress 211–15, 212–15
terfenadine, and driving fitness 1094, 1095
terrorism 837–8
test results
quality assurance 38, 42
reporting 38–9, 42–3
testimonial capacity 816–17
tetrachloromethane 962
tetramethylbenzidine 1144
textiles see clothing and textiles
TGIF-α 245, 248
TGF-β3 245
Thailand 23
thallium 952–3
exposure 952–3
poisoning 70, 855
reference concentrations 953
sample requirements 853
toxicity 953
toxicokinetics 953
thanatochemistry see biochemistry, postmortem
thebaine 944
theophylline poisoning 848
therapeutic privilege 1212–13
thermal injuries
burns see burns
child abuse 732, 732–4, 734
respiratory tract 460
scalds see scalds
Thiemann–Nitz radiographic atlas 794
thin layer chromatography 868
thin-skull rule 206
thiopental 934, 935
thoracic compression 396–8
accidental 398
circumstances 397
definition 396
frequency/occurrence 396–7, 396, 397
pathomorphology 397–8
suicide 398
thorax
diving accidents 436–7
road traffic accidents 1112
unstable 402–3
in victim identification 1186–7, 1187
see also chest
thromboembolism 226–7, 241, 241
post-abortion 522
pulmonary 63, 241, 282, 614, 615, 616, 617
thrombosis 63
post-abortion 522
thymus, petechial haemorrhage 658
thyroxine overdose 849
tibial fractures 731
time of death 97–108, 204–5, 217
acute (minutes to hours) 222–5
compound method 101–3, 102, 103–6
crime scenes 126
determination of 98, 100
gastric contents 105–7, 107
immediate (minutes) 218–22
instantaneous 217–18, 217, 218
late (days to weeks/months) 225–8
objectives of estimation 98
potassium in vitreous humour 103–5, 106
putrefaction 107–8, 109
rectal temperature 99, 101
time of flight 868
thrombus 62
thrombus, postural 62
thrombus of gastric contents 62
thrombus of pulmonary embolism 62
toxic elements 947–55, 947
human biomonitoring values 948
see also specific elements
toxicity 841
evidence base for 841–3
toxicokinetcis/toxicogenetics 889–99
absorption 889, 892–4
bioavailability 892
clearance 890–1
distribution 889, 894–5
elimination rate constant 891–2
excretion 889, 899
first-order elimination 891–2
LADM principle 889, 890
metabolism 889, 893, 895–9
plasma elimination half-life 891
release of active compound 889, 892
volume of distribution 890
toxicology 900–93
adverse drug reactions 556–8, 557, 557, 840–4
aircraft accidents 1128
alcohols 900–18
associations and organisations 832
clinical forensic 835–7
child welfare 836–7
driving under the influence 835–6
drug-facilitated sexual assault 837
workplace drug testing 836
diving accidents 437
doping 837, 972–7
drug screening 866–72
analytical methods 869–70
confirmation tests 867
instability of drugs during 882–3, 882
instrumentation 868–9, 868, 869
isolation step 867–8
method performance 870–1, 871
target substances 866
education and research 831–2
epidemiology 841
fatal toxicity index 835, 835
illegal drugs 833–4, 918–32
intoxication see toxidromes
laboratory standards 39–43, 832–3
legal issues 831–9
narcotics 943–7
natural poisons 961–6
pesticides and insecticides 966–72
poisoning see poisoning
postmortem 824–5
sabotage, terrorism and chemical warfare 837–8
sedatives and hypnotics 932–43
sexual abuse 696–7
SIDS and SUDI 668
solvents and gaseous poisons 955–61
specimen collection 856–62
bile 858–9
blood, serum and plasma 857–8
brain 859
kidney 859
liver 859
lungs 859
non-biological exhibits 861–2
skeletal muscle 860
special considerations 862
urine 858
vitreous humour 858
stability and artefacts 873–88
blood from living individuals 875–6
definitions and causes 873–7, 874, 875
evaluation of 883–5
postmortem specimens 877–8, 887
processing and analysis 882–3, 882
sampling artefacts and drug stability 878–80, 880
storage 881–2, 881
urine from living individuals 876–7
/toxic elements, sampling for 852,
toxidromes 862–5, 880
alcohol-related 576, 835–6, 916–17,
aircraft accidents 1127–30
soot inhalation 459
dissection of 378
obstruction of 407–9, 408
trauma 1058
/traquea
/trace elements, sampling for 852, 853
trace evidence at crime scenes 126–7
trahea
dissection of 378
obstruction of 407–9, 408
soot inhalation 459
traconeoesophageal fistula 150
traffic accidents 146, 265, 265, 1108–39
aircraft accidents 1127–30
biomechanical aspects of reconstruction 1129
/obstruction injuries 1129–30
miscellaneous aerial vehicles 1130
postmortem examination 1128–9
scene of crash 1128
toxicoLOGY 1128
alcohol-related 576, 835–6, 916–17, 917, 1005, 1050, 1051, 1057–73
car to pedestrian collisions 1108–13
contributing factors 1058
expert evidence 562, 563
mass disasters 1130–4
cause and time of death 1133–4
doctor’s task 1131
examination of bodies and body parts 1131
forensic medical examination 1131–4
pregnant women 523
railway accidents 1121–7, 1122
injury analysis 1123–4, 1123
injury patterns 1125–6, 1125
postmortem surveys 1124–5, 1124
train speed and injury pattern 1123
road traffic accidents 1108–17
/abbreviated injury scale 1109
car to car collisions 1113–17, 1115
car to pedestrian collisions 1108–13, 1109–13
two-wheeler vehicle to car collisions 1116–17, 1116
/traffic medicine
/definitions 998
in forensic medicine 997
operationalisation 998–1001, 999–1001
/relevance of 997
see also driving fitness
training
forensic psychiatry 824–5
human rights 25–6
toxicoLOGY 831–2
trajectory 336
tram-like haemataloma 261, 262
tramadol 926
metabolism 897
toxicological analysis 1083
transferrin, carbohydrate-deficient 1101–2
transfusion-associated circulatory overload (TACO) 554
transfusion-related acute lung injury (TRALI) 554
transplantation 166–70
diagnosis of brain death see brain death
donor collection and tissue retrieval 169
regulations and procedures, in Germany 166–7
in UK 1056–7
trauma see injuries
traumatic asphyxia 374
traumatology
and criminality 207–10
definition 203
legal issues 203–7
trazodone, toxicological analysis 1083
/treatment refusal 819
Treponema pallidum 695
triazolam
chemical structure 937
metabolism 938
pharmacokinetics 934
/trichloroethylene 962
Trichomonas vaginalis 695
triclofos 942
chemical structure 941
pharmacokinetics 934
/triprolidine, and driving fitness 1093
tubal pregnancy 517–18, 517, 518
tuberculosis, alcohol-associated 572
two-wheeler vehicle to car collisions 1116–17, 1116
/tympanic membrane rupture 489
tyre tread marks 261, 1113
ubiquitin 249
ultrasound, cranial 722
ultraviolet detector 868
ultraviolet light 1144
umbilical cord
/decemration of 508
/irregular edge 507
underfunding 16
underwater welding 485
United Kingdom 12–13
brain death diagnosis 169
forensic society training 825
Human Tissue Act (2004) 168
retrospective civil assessments 817
statutory limits for alcohol levels 1062
testamentary capacity 817
transplantation procedures 167–8
United Nations
Committee Against Torture 18
Declaration of Human Rights 20
model autopsy protocol 34
United States
competence to stand trial 818
consent to treatment 817
diminished responsibility 822
forensic society training 825
insanity standards 820
legal competency 816
rehabilitation and security 823
retrospective civil assessments 817
statutory limits for alcohol levels 1063
testamentary capacity 817
urea 639
Ureaplasma urealyticum 695
urinary tract infection 63
urine
/diabetic coma 636
/leakage postmortem 124
/specimen collection 858, 880
/vaginal discharge in prepubertal girls 690
/vaginal foreign bodies 690
VALIANT (Valsartan in Acute Myocardial Infarction Trial) study 1013
validation
forensic DNA laboratories 38
forensic toxicological laboratories 41