

# Index

Page numbers in bold indicate illustrations, italics indicate tables. Headings in italics indicate legal cases or publication titles.

- absolute genetic patent claim 77–80
- acquired characteristics, theory of 33
- Africa
  - agriculture and biotechnology 63–4
  - AU Model Law 70–2
  - development challenges 62–3
  - issues concerning patenting of living organisms 68–70
- African Charter on Human and People's Rights 61
- Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) 3, 17, 39, 56, 57n18, 59, 86–8, 124, 142–4
- agriculture in Africa 63–4
- agrobiodiversity in Nepal. *see* farmers' willingness to pay for conservation in Nepal
- Aldridge, S. 35
- Aldy, J. 174
- Amgen, Inc v Chugai Pharmaceutical Co and Genetics Institute* 83
- animal varieties and patent application 15–16
- antonyms as ethical framework
  - autonomy and control 34–5, 47–8
  - sanctity and violability 36–7, 50–1
  - uniqueness and fungibility 35–6, 48–9
- Aristotle 32–3
- AU Model Law 70–2
- autonomy and control 34–5, 47–8
  
- bacteria as patentable 17
- Bergson, Henri 33
- Berkey v Anderson* 110
- Biogen* 13
- biological resources
  - AU Model Law 70–2
  - protection of 65–8
  - value of 123
  
- biology and chemistry, blurred line between 42–7
- biopiracy 21–2, 123–4, 126, 126–8, 138, 155
- biotechnological inventions, patent law development 10–11
- biotechnology
  - agriculture in Africa 63–4
  - case law and 39–42
  - as part of triptych with ethics and patent law 27–8
  - scientific background to 28–30
- blood, selling of
  - commodification 109–10
  - rights 95
- Blumberg, Baruch 78–9, 78n16
- body parts and fluids
  - future research into legal issues 117–18
  - rights of sale 95
  - see also Moore v Regents of University of California*
- bolar exemption 19–20
- Bolkestein, Frits 88
- Bostyn, Sven 89–90
- Busquin, Philippe 88
  
- Canada
  - case law and biotechnology 39–42
  - Plant Breeders' Rights Act 1990 40
- case law and biotechnology 39–42
- cells and cell lines, patentability of 17
- central dogma, theory of 31, 32
- Chakrabarty, Diamond v.* 39, 40, 41, 43, 87, 113, 139, 147
- Chamarik, Saneh 135
- chemistry and biology, blurred line between 42–7
- Chiron Corporation 77–80
- Chiron v Organon* 13
- Clay v Asch* 116–17

- cloning 18
- commodification of the human body 110  
*see also Moore v Regents of University of California*
- commons concept 140, 141–2, 149, 151–3
- Community Forests Act (CFA) (Thailand) 135–6
- community rights and traditional knowledge 134–6
- complexity of life 35, 49
- compulsory licences 20, 76
- conditional genetic patent claim 80–4
- conservation of landraces in Nepal. *see* farmers' willingness to pay for conservation in Nepal
- contingent valuation method 163–4
- control and autonomy 34–5, 47–8
- Convention on Biodiversity (CBD) 67, 125, 149–51, 152, 153, 154
- copyright law, treatment of in public debate 1–2
- country of origin 22–3
- Crick, Francis 31
- criteria for determining patentable subject matter 12–18, 144–8
- crop genetic resources in Nepal. *see* farmers' willingness to pay for conservation in Nepal
- Daar v Yellow Cab Company* 112
- Danforth, M.T. 112
- Darwinism 33–4
- Dasgupta, S. 151
- databases of traditional knowledge 137
- Declaration on the Right to Development (DRD) 54, 55
- Declaration on the Rights of Indigenous Peoples 67–8
- deoxyribonucleic acid (DNA) 28–30, **29, 30**
- deposit of biological material 20, 49
- developing countries, effect of TRIPS 143
- development, human right to 54–8
- Diamond v. Chakrabarty* 39, 40, 41, 43, 87, 113, 139, 147
- disclosure of origin 22–3
- DNA (deoxyribonucleic acid) 28–30, **29, 30**
- Doha Declaration 143
- Dosi, G. 180–1, 182
- Draft Principles and Guidelines for the Protection of the Heritage of Indigenous Peoples 67–8
- Duke University, Madey v* 93–4
- Dutfield, G. 123, 150
- economics, evolutionary 180–3
- Edinburgh patent* 18
- embryonic stem cells (hESC), patenting of 18
- essential biological processes and patent applications 16
- ethics  
 framework for examining patents on life 31–7  
 as part of triptych with biotechnology and patent law 27–8
- European Directive on the Legal Protection of Biotechnological Inventions 10–11, 12, 13, 14, 15, 16, 17, 18, 20–1, 84–90
- European Patent Convention (EPC) 9–10, 16, 144
- European Patent Office (EPO) 9–10, 18, 22, 144
- evolution 33–4
- evolutionary economics 180–3
- Ex parte Hibberd* 39–40
- exceptions to grant 18–21
- exclusionary rights of patents 75–6
- experimental use exemptions 18–20
- extent of patent protection 20–1
- false impressions of control 47–8
- FAO International Treaty on Plant Genetic Resources for Food and Agriculture 67
- Farmers' Privilege 21
- farmers' rights 21, 23, 71
- farmers' willingness to pay for conservation in Nepal  
 background to study 161–3  
 calculation and analysis of WTP bids 164–6166–7  
 contingent valuation method 163–4  
 farmers' knowledge of biodiversity 169, 169  
 importance of landraces 170, 170–1, 171  
 and methods of conservation 173, 173–5, 174, 175  
 and perceived threats of extinction 172, 172–3, 173  
 research area, sample and survey 164–6

- sample characteristics 167–8, 168
- Fischer, J. 114
- folklore, protection of 134
  - see also* traditional knowledge
- Fowler, C. 148
- fungibility and uniqueness 35–6, 48–9
- Galen 33
- Genentech* 15, 84, 85, 86
- genes
  - discovery of types of 31–2
  - Human Genome Project 32
- Genetic Sequence Right (GSR) 92–3
- Geographical Indications (GI) protection 130–1
- Germany, experimental use exemptions 19
- Gibson, J. 124
- globalisation and the right to development 56–8
- Golde, David W. 97, 99–100, 102–3
- Green v Commissioner* 95, 109
- Harvard College v. Canada (Commissioner of Patents)* 16, 41, 44–6, 48, 140, 144–7, 155–6
- Hecht v Kane* 117
- Hegel, G.W.F. 142
- higher life forms, patentability criteria 144–7, 155–6
- Hughes, Justin 142
- human embryonic stem cells (hESC), patenting of 18
- Human Genome Project 32
- human rights
  - implication of globalisation 57–8
  - protection of traditional knowledge 67–8
- In re Allen* 40
- inappropriability of knowledge 183–4
- industrial application requirement of patent applications 14–15
- informed consent 111–12
- intellectual property rights
  - balance between private/public interests 59–62
  - failure regarding traditional knowledge 137–8
  - protecting traditional knowledge 22
  - and the right to development 56
  - sui generis* system of 92–3
  - traditional knowledge 123–4
- International Convention for the Protection of New Plant Varieties (UPOV) 15, 40, 40n72, 67
- International Covenant on Civil and Political Rights (ICCPR) 55, 55n10
- International Covenant on Economic, Social and Cultural Rights (ICESCR) 55, 55n10, 59–60
- inventive step requirement in patent applications 13–14
- Jacob, François 31
- J.E.M. Ag Supply, Inc. v. Pioneer Hi-Bred International* 40
- Kalkstein, Joshua 100
- Kevles, David 110
- Kirin-Amgen v Hoechst Marion Roussel* 80–4, 86
- Kloppenber, J. 154
- knowledge, inappropriability of 183–4
- Koestler, Arthur 33
- labour theory of property 141–2
- Lamarck, Jean 33
- landraces in Nepal. *see* farmers' willingness to pay for conservation in Nepal
- life
  - complexity of 35, 49
  - sanctity of 50–1
- life forms
  - first patent on 39
  - as fungible/unique 35–6
  - issues concerning patenting of in Africa 68–70
  - patentability criteria 144–8, 155–6
- life patents 3
- limitations to grant 18–21
- Locke, John 141
- Madey v Duke University* 93–4
- Marks, Stephen 56
- material transfer agreements 133
- materialism 31–2, 35
- messenger RNA (mRNA) 29–30
- micro-organisms
  - first patent on 39
  - patentability of 17
- microbiological processes and patent applications 17

- Monod, Jacques 31
- Monsanto Canada Inc. v. Schmeiser* 41–2, 46, 47–8, 48, 140, 146–7, 155–6
- Moore v Regents of University of California*  
 account of 96–103, **98**, **102**  
 analysis of case 103–8, **105**  
 conclusion of 113–14  
 future research possibilities 117–18  
 issues and cases following 114–17  
 journal articles referred to 112  
 use of precedents 109–13
- morality and patent applications 17–18
- mRNA (messenger RNA) 29–30
- Mycogen* 15
- Neem* 22
- Nepal. *see* farmers' willingness to pay for conservation in Nepal
- new technical effect, doctrine of 183
- Novartis* 16
- novelty requirement in applications 12–13
- OncoMouse (Harvard College v. Canada (Commissioner of Patents))* 16, 41, 44–6, 48, 140, 144–7, 155–6
- One Tambon One Product (OTOP) 137
- ordre public and patent applications 17–18
- organisms as fungible/unique 35–6
- ownership of body parts. *see* *Moore v Regents of University of California*
- Paris Convention on Industry Property Rights 11–12
- Pasteur, Louis 39
- Patent Act 1985 (Canada) 37–9
- Patent Act (Thailand) 131
- patent applications  
 criteria 144–8  
 doctrine of new technical effect 183  
 essential biological processes 16  
 examination guidelines 23  
 industrial application requirement 14–15  
 inventive step requirement 13–14  
 microbiological processes 17  
 novelty requirement 12–13  
 ordre public and morality 17–18  
 plant and animal varieties 15–16  
 sufficiency requirement 15
- patent law  
 development of 9–11  
 exceptions/limitations to grant 18–21  
 language of not suitable for living organisms 52  
 as part of triptych with ethics and biotechnology 27–8  
 specification requirements of 49  
 standards in 37–9  
 treatment of in public debate 1–2  
 two cultures of 2–3
- patent system  
 limitations of regarding recombinant proteins 90–1  
 politics of 142–3
- Patenting DNA Sequences (Polynucleotides) and Scope of Protection in the European Union* (EU Report) 88–90
- Patenting Lives Projects 3–6
- patents, granting and exploitation of 11
- Patents Act 1977 (UK) 12, 13, 14, 15, 20, 37
- People v Guerra* 112
- People v McDonald* 113
- People v Shirley* 112
- People's Constitution of Thailand 135
- pharmaceutical sector 56n16
- Pignatella, C. 114
- Pioneer Hi-Bred v. Canada (Commissioner of Patents)* 41, 44
- Plant Breeders' Rights Act 1990 (Canada) 40
- plant breeders' rights 185–94, **189**
- plant genetic resources (PGRs) and traditional knowledge 149–55
- Plant Patent Act 1930 (US) 40n66
- Plant Patent Act (US) 40
- Plant Varieties Act 1997 15
- plant varieties and patent application 15–16
- Plant Variety Protection Act 1970 (US) 40
- Plant Variety Protection (PVP) Act (Thailand) 131
- pluripotent stem cells 18
- Poggi v Scott* 103, 113
- politics of global patent system 142–3
- prior informed consent (PIC) 123, 133
- property law 36–7
- property rights, foundation of 141–2
- Protection and Promotion of Traditional Thai Medicinal Intelligence Act (1999) 132
- protein construction 29–30, **30**

- proteins, recombinant, and limitations of patent system 90–1
- public policy and patent applications 17–18
- Re Abitibi* 41, 43, 45
- Re Application of Abitibi Co.* 41, 43, 45
- Re Bergy* 42–3, 45
- recombinant proteins and limitations of patent system 90–1
- research exemptions 18–20
- Rifkin, Jeremy 36
- right to development 54–8
- Rio Declaration on Environment and Development 50
- Roberts, Richard 32
- Roos, Nikolas 142
- Rose, Carol 50–1
- Salazar, Silvar 65
- sanctity and violability 36–7, 50–1
- Schmeiser, Monsanto Canada Inc. v.* 41–2, 46, 47–8, 48, 140, 146–7, 155–6
- scientific background to biotechnology 28–30
- selection mechanism for plant breeds' rights 190–4
- sequence hypothesis 31
- Sharp, Phillip 32
- Singer, Joseph 36
- Snow, C.P. 2
- Somerville, M. 36
- specification requirements of patent law 12–18, 49
- sperm as property 117
- spleen cells, ownership of 112
- split genes 32
- standards in patent law 37–9
- State, role of 57
- stem cells, human embryo (hESC), patenting of 18
- sufficiency requirement of patent applications 15
- sui generis system of intellectual property 92–3
- synthetic dye industry 183
- Technical Board of Appeal 83–4
- technology, evolutionary economics as way to study 180–3
- Thailand  
biopiracy 126, 126–8, 138
- Community Forests Act (CFA) 135–6
- community rights and traditional knowledge 134–6, 138
- databases of traditional knowledge 137
- Geographical Indications (GI) protection 130–1
- laws in 130–2
- One Tambon One Product (OTOP) 137
- Patent Act 131
- People's Constitution 135
- Plant Variety Protection (PVP) Act 131
- Protection and Promotion of Traditional Thai Medicinal Intelligence Act (1999) 132
- targeting legal treatment of traditional knowledge 132–4
- threats additional to biopiracy 128–30, 129–30
- Tobin, B. 123
- totipotent cells 18
- traditional knowledge  
AU Model Law 70–2
- biopiracy discourse 123
- biopiracy threat in Thailand 126, 126–8, 138
- and community rights 134–6, 138
- databases of 137
- definitions 121–2
- failure of intellectual property rights 137–8
- intellectual property rights discourse 123–4
- international fora 124–5
- One Tambon One Product (OTOP) 137
- and plant genetic resources (PGRs) 149–55
- promotion of 129, 138
- protection of 21–3, 65–8
- roles of 122
- targeting legal treatment of 132–4
- Thai legislation 130–2
- threats additional to biopiracy 128–30, 129–30
- value of 123
- transfer RNA (tRNA) 29–30
- TRIPS (Agreement on Trade Related Aspects of Intellectual Property Rights) 3, 17, 39, 56, 57n18, 59, 86–8, 124, 142–4
- triptych of ethics, biotechnology and patent law 27–8

- tRNA (transfer RNA) 29–30
- UC Irvine Fertility case 116–17
- UK Intellectual Property Office (UKIPO)  
14, 18
- Uniform Anatomical Gift Act (UAGA) 108,  
111
- uniqueness and fungibility 35–6, 48–9
- United Kingdom, implementation of  
European Directive 10–11
- United States  
case law and biotechnology 39–40  
Plant Patent Act 1930 40, 40n66  
Plant Variety Protection Act 1970 40
- United States of America v Dorothy R. Graber* 95, 109
- Universal Declaration of Human Rights  
(UDHR) 55, 55n9, 59
- UPOV Convention 40, 40n72
- Utkarsh, G. 151
- Venner v State* 108
- Vienna Declaration and Platform for Action  
55
- violability and sanctity 36–7, 50–1
- viruses as patentable 17
- vitalism 31, 32–4
- Wellcome* 13
- willingness to pay for conservation. *see*  
farmers' willingness to pay for  
conservation in Nepal
- Wöhler, Friedrich 33
- Wood, David 153
- World Intellectual Property Organisation  
(WIPO) 124–5
- yeast 39
- York v Jones* 109