

Julian Huxley

From Wikipedia, the free encyclopedia

Sir Julian Sorell Huxley FRS (22 June 1887 – 14 February 1975) was an English evolutionary biologist, humanist and internationalist. He was a proponent of natural selection, and a leading figure in the mid-twentieth century evolutionary synthesis. He was Secretary of the Zoological Society of London (1935–1942), the first Director of UNESCO, and a founding member of the World Wildlife Fund.

Huxley was well-known for his presentation of science in books and articles, and on radio and television. He was awarded UNESCO's Kalinga Prize for the popularisation of science in 1953, the Darwin Medal of the Royal Society in 1956, and the Darwin–Wallace Medal of the Linnaean Society in 1958. He was also knighted in that same year, 1958, a hundred years after Charles Darwin and Alfred Russel Wallace announced the theory of evolution by natural selection. In 1959 he received a Special Award of the Lasker Foundation in the category Planned Parenthood – World Population. Huxley was a prominent member of the British Eugenics Society, and its President from 1959–1962.

Contents

- 1 Life
 - 1.1 Early life
 - 1.2 Student life

Julian Huxley



Julian Huxley as Fellow of New College, Oxford 1922

Born	22 June 1887 London
Died	14 February 1975 (aged 87)
Residence	London
Nationality	British
Fields	Evolutionary biology
Institutions	Rice Institute, Oxford University, Kings College London, Zoological Society, UNESCO

- 1.2 Student life
- 2 Career
 - 2.1 Early career
 - 2.2 Mid career
 - 2.3 Later career
- 3 Special themes
 - 3.1 Evolution
 - 3.1.1 Personal influence
 - 3.1.2 Evolutionary synthesis
 - 3.1.3 Evolutionary progress
 - 3.2 Secular humanism
 - 3.2.1 Religious naturalism
 - 3.3 Eugenics and race
 - 3.4 Public life and popularisation
 - 3.5 Terms coined
 - 3.6 Titles and phrases
- 4 References
- 5 Works
 - 5.1 Contributions
- 6 Biographies
- 7 External links
- 8 Awards

Alma mater	Balliol College, Oxford
Known for	Evolutionary synthesis, Humanism, UNESCO, Conservation, Eugenics
Influences	T.H. Huxley, W.G. (Piggy) Hill
Influenced	E.B. Ford, Gavin de Beer, Aldous Huxley
Notable awards	Kalinga Prize, Darwin Medal, Darwin–Wallace Medal, Lasker Award

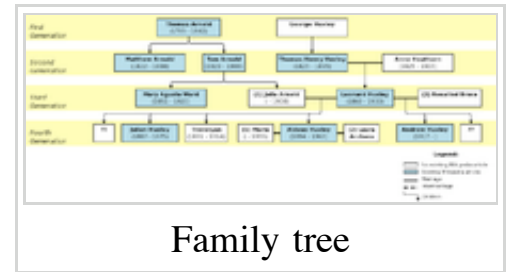
Life

See also: Huxley family

Huxley came from the distinguished Huxley family. His brother was the writer Aldous Huxley, and his half-brother a fellow biologist and Nobel laureate, Andrew Huxley; his father was writer and editor Leonard Huxley; and his paternal grandfather was Thomas Henry Huxley, a friend and supporter of Charles Darwin and proponent of evolution. His maternal grandfather was the academic Tom Arnold, great-uncle poet Matthew Arnold and great-grandfather Thomas Arnold of Rugby School.

Early life

Huxley was born on June 22, 1887, at the London house of his aunt, the novelist Mary Augusta Ward, while his father was attending the jubilee celebrations of Queen Victoria. Huxley grew up at the family home in Surrey, England where he showed an early interest in nature, as he was given lessons by his grandfather, Thomas Henry Huxley. When he heard THH talking at dinner about the lack of parental care in fish, Julian piped up with "What about the stickleback, Gran'pater?". Also, according to Julian himself, his grandfather took him to visit J.D. Hooker at Kew.^[1]



T.H. Huxley with Julian in 1893

At the age of thirteen Huxley attended Eton College as a King's Scholar, and continued to develop scientific interests; his grandfather had influenced the school to build science laboratories much earlier. At Eton he developed an interest in ornithology, guided by science master W.D. 'Piggy' Hill. "Piggy was a genius as a teacher... I have always been grateful to him."^[2] In 1905 Huxley won a scholarship in Zoology to Balliol College, Oxford.

Student life

In 1906, after a summer in Germany, Huxley took his place in Oxford, where he developed a particular interest in embryology and protozoa. In the autumn term of his final year, 1908, his mother died from cancer at only 46: a terrible blow for her husband, three sons and young eight-year old daughter Margaret. In 1909 he graduated with first class honours, and spent that July at the international gathering for the centenary of Darwin's birth, held at the University of Cambridge. Also, it was the fiftieth anniversary of the publication of the *Origin of species*.

Career

Early career

Huxley got a scholarship to spend a year at the Naples Marine Biological Station where he developed his interest in developmental biology by investigating sea squirts and sea urchins. In 1910 he was appointed as Demonstrator in the Department of Zoology and Comparative Anatomy at Oxford University, and started on the systematic observation of the courtship habits of water birds such as the Common Redshank (a waders) and grebes (which are divers). Bird watching in childhood had given Huxley his interest in ornithology, and he helped devise systems for the surveying and conservation of birds. His particular interest was bird behaviour, especially the courtship of water birds. His 1914 paper on the Great Crested Grebe, later published as a book, was a landmark in avian ethology; his invention of vivid labels for the rituals (such as 'penguin dance', 'plesiosaurus race' etc.) made the ideas memorable and interesting to the general reader. For an assessment of Huxley's ethology see Burkhardt 1993.^[3]

In 1912 his life took a new turn. He was asked by Edgar Odell Lovett to take the lead in setting up the new Department of Biology at the newly created Rice Institute (now Rice University) in Houston, Texas, which he accepted, planning to start the following year. Huxley made an exploratory trip to the USA in September 1912, visiting a number of leading universities as well as the Rice Institute. At T.H. Morgan's fly lab (Columbia University) he invited H.J. Muller to join him at Rice. Muller agreed to be his deputy, hurried to complete his PhD and moved to Houston for the beginning of the 1915–1916 academic year. At Rice, Muller taught biology and continued *Drosophila* lab work.



Great Crested Grebes

Before taking up the post of Assistant Professor at the Rice



Julian Huxley
British Army Intelligence
Corps 1918

BEFORE taking up the post of Assistant Professor at the Rice Institute, Huxley spent a year in Germany preparing for his demanding new job. Working in a laboratory just months before the outbreak of World War I, Huxley overheard fellow academics comment on a passing aircraft "it will not be long before those planes are flying over England". In 1913 Huxley had a nervous breakdown after the break-up of his relationship with 'K',^[4] and rested in a nursing home. His depression returned the next year, and he and his brother Trevenen (two years his junior) ended up in the same nursing home. Sadly, Trevenen hanged himself. Depressive illness had afflicted others in the Huxley family.

One pleasure of Huxley's life in Texas was the sight of his first hummingbird, though his visit to Edward Avery McIlhenny's estate on Avery Island in Louisiana was more significant. The McIlhennys and their Avery cousins owned the entire island, and the McIlhenny branch used it to produce their famous Tabasco sauce. Birds were one of McIlhenny's

passions, however, and around 1895 he had set up a private sanctuary on the Island, called Bird City. There Huxley found egrets, herons and bitterns. These water birds, like the grebes, exhibit mutual courtship, with the pairs displaying to each other, and with the secondary sexual characters equally developed in both sexes.^[5]

In September 1916 Huxley returned to England from Texas to assist in the war effort, working in the British Army Intelligence Corps, first in Sussex, and then in northern Italy. After the war he became a Fellow at New College, Oxford and was made Senior Demonstrator in the University Department of Zoology. In fact, Huxley took the place of his old tutor Geoffrey Smith, who had been killed in the battle of the Somme on the Western Front.

In 1919 Huxley married Juliette Baillot. She was a French Swiss girl whom he had met at Garsington Manor, the country house of Lady Ottoline Morrell, a Bloomsbury Group socialite with a penchant for artists and intellectuals. The newly-weds' life together included students, faculty wives, grebes and, unfortunately, another depressive breakdown, this time rather serious. From his wife's autobiography it seems his mental illness took the form of a bipolar disorder, with the depressive phases being of moderate to severe intensity. It took a long time for him to recover on this occasion, but despite this he left a legacy of students

who admired him, and who became leaders in zoology for the next thirty or forty years. E.B. Ford always remembered his openness and encouragement at the start of his career.^{[6][7]}



Huxley with his two sons, Anthony and Francis.

In 1925 Huxley moved to King's College London as Professor of Zoology, but in 1927, to the amazement of his colleagues, he resigned his chair to work full time with H.G. Wells and his son G.P. Wells on *The Science of Life* (see below). For some time Huxley retained his room at King's College, and continued as Honorary Lecturer in the Zoology Department. From 1927–31 he was also Fullerian Professor of Physiology at the Royal Institution, where he gave an annual lectures series. No-one realised it at the time, but he had come to the end of his life as a university academic.

In 1929, after finishing work on *The Science of Life*,

Huxley visited East Africa to advise the Colonial Office on education in British East Africa (for the most part Kenya, Uganda and Tanganyika). He discovered that the wildlife on the Serengeti plain was almost undisturbed because the tsetse fly (the vector for the trypanosome parasite which causes sleeping sickness in humans) prevented human settlement there. He tells about these experiences in *Africa view* (1931), and so does his wife.^[8] She reveals that he fell in love with an 18-year old American girl on board ship (when Juliette was not present), and then presented Juliette with his ideas for an open marriage: "What Julian really wanted was... a definite freedom from the conventional bonds of marriage." The couple separated for a while; Julian traveled to the USA, hoping to land a suitable appointment and, in due course, to marry Miss Weldmeier. He left no account of what transpired, but he was evidently not successful, and returned to England to resume his marriage in 1931. For the next couple of years Huxley still angled for an appointment in the USA, without success.^[9]



Juliette Huxley, c.1929.

Mid career

As the 1930s started, Huxley travelled widely and took part in a variety of activities which

were partly scientific and partly political. In 1931 Huxley visited the USSR at the invitation of Intourist, where initially he admired the results of social and economic planning on a large scale. Later, back in the United Kingdom, he became a founding member of the think tank Political and Economic Planning.

In the 1930s Huxley visited Kenya and other East African countries to see the conservation work, including the creation of national parks, which was happening in the few areas that remained uninhabited due to malaria. From 1933–38 he was a member of the committee for Lord Hailey's Africa Survey.



Huxley lights a cigarette under his grandfather's portrait, c.1935.

In 1935 Huxley was appointed Secretary to the Zoological Society of London, and spent much of the next seven years running the society and its zoological gardens, the London Zoo and Whipsnade Park, alongside his writing and research. The previous Director, Peter Chalmers Mitchell, had been in post for many years, and had skillfully avoided conflict with the Fellows and Council. Things were rather different when Huxley arrived. Huxley was not a skilled administrator; his wife said "He was impatient... and lacked tact".^[10] He instituted a number of changes and innovations, more than some approved of. For example, Huxley introduced a whole range of ideas designed to make the Zoo child-friendly. Today, this would pass without comment; but then it was more controversial. He fenced off the Fellows' Lawn to establish Pets Corner; he appointed new assistant curators, encouraging them to talk to children; he initiated the Zoo Magazine.^[11] Fellows and their guests had the privilege of free entry on Sundays, a closed day to the general public.

Today, that would be unthinkable, and Sundays are now open to the public. Huxley's mild suggestion (that the guests should pay) encroached on territory the Fellows thought was theirs by right.

In 1941 Huxley was invited to the United States on a lecturing tour, and generated some controversy by saying that he thought the United States should join World War II: a few weeks later came the attack on Pearl Harbor. When the USA joined the war, he found it difficult to get a passage back to the UK, and his lecture tour was extended. The Council of the Zoological Society — "a curious assemblage... of wealthy amateurs, self-perpetuating

and autocratic" ^[12] — uneasy with their Secretary, used this as an opportunity to remove him. This they did by the rather unpleasant tactic of abolishing his post "to save expenses". Since Huxley had taken a half-salary cut at the start of the war, and no salary at all whilst he was in America, the Council's action was widely read as a personal attack on Huxley. A public controversy ensued, but eventually the Council got its way.

In 1943 he was asked by the British government to join the Colonial Commission on Higher Education. The Commission's remit was to survey the West African Commonwealth countries for suitable locations for the creation of universities. There he acquired a disease, went down with hepatitis, and had a serious mental breakdown. He was completely disabled, treated with ECT, and took a full year to recover. He was 55.

Later career

Huxley, a lifelong internationalist with a concern for education, got involved in the creation of the United Nations Educational, Scientific and Cultural Organization (UNESCO), and became the organization's first Director-General in 1946. His term of office, six years in the Charter, was cut down to two years at the behest of the USA delegation.^[13] The reasons are not known for sure, but his left-wing tendencies and humanism were likely factors. In practice, his lack of religious affiliation was a positive strength, as was his wide range of international interests and contacts. His brief tenure of office was generally regarded as dynamic and successful. In a fortnight he dashed off a 60-page booklet on the purpose and philosophy of UNESCO, eventually printed and issued as an official document. There were, however, many conservative-minded opponents of his scientific humanism. His idea of restraining population growth with birth control was anathema to both the Catholic Church and the Comintern/Cominform. In its first few years UNESCO was dynamic and broke new ground; since Huxley it has become larger, more bureaucratic and stable.^{[14][15]} The personal and social side of the years in Paris are well described by his wife.^[16]

Huxley's internationalist and conservation interests also led him, with Victor Stolan, Sir Peter Scott, Max Nicholson and Guy Mountfort, to set up the WWF (World Wide Fund for Nature under its former name of the World Wildlife Fund).

Another post-war activity was Huxley's attack on the Soviet politico-scientist Lysenko, who had espoused a Lamarckian heredity, made unscientific pronouncements on agriculture, used his influence to destroy classical genetics in Russia and to move genuine scientists from their posts. In 1940, the leading botanical geneticist Vavilov was arrested, and Lysenko replaced

him as director of the Institute of Genetics. In 1941, Vavilov was tried, found guilty of 'sabotage' and sentenced to death. Reprieved, he died in jail of malnutrition in 1943. Lysenko's machinations were the cause of his arrest. Worse still, Lysenkoism not only denied proven genetic facts, it stopped the artificial selection of crops on Darwinian principles. This may have contributed to the regular shortage of food from the Soviet agricultural system (Soviet famines). Huxley, who had twice visited the Soviet Union, was originally not anti-communist, but the ruthless adoption of Lysenkoism by Stalin ended his tolerant attitude.^[17] Lysenko ended his days in a Soviet mental hospital, and Vavilov's reputation was posthumously restored in 1955.

In the 1950s Huxley played a role in bringing to the English-speaking public the work of the French Jesuit-palaeontologist Pierre Teilhard de Chardin, whom he believed had been unfairly treated by the Catholic and Jesuit hierarchy. Both men believed in evolution, but differed in its interpretation as de Chardin was a Christian, whilst Huxley was an unbeliever. Huxley wrote the Forward to *The Phenomenon of Man* (1959) and was bitterly attacked by his rationalist friends for doing so.^[18]

On Huxley's death at 87 in 1975, John Owen (Director of National Parks for Tanganyika) wrote "Julian Huxley was one of the world's great men... he played a seminal role in wild life conservation in [East] Africa in the early days... [and in] the far-reaching influence he exerted [on] the international community".^[19]

In addition to his international and humanist concerns, his research interests covered evolution in all its aspects, ethology, embryology, genetics, anthropology and to some extent the infant field of cell biology. Julian's eminence as an advocate for evolution, and especially his contribution to the new evolutionary synthesis, led to his awards of the Darwin Medal of the Royal Society in 1956, and the Darwin–Wallace Medal of the Linnaean Society in 1958. 1958 was the centenary anniversary of the joint presentation *On the tendency of species to form varieties; and the perpetuation of varieties and species by natural means of selection* by Darwin and Wallace.^[20]

Huxley was a friend and mentor of the biologists and Nobel laureates Konrad Lorenz and Niko Tinbergen,^[21] and taught and encouraged many others. In general, he was more of an all-round naturalist than his famous grandfather,^[22] and contributed much to the acceptance of natural selection. His outlook was international, and somewhat idealistic: his interest in progress and evolutionary humanism runs through much of his published work.^[23]


Special themes

Evolution

Huxley was the most important biologist after August Weismann to insist on natural selection as the primary agent in evolution. He was a major player in the mid-twentieth century evolutionary synthesis. A fine communicator, he was a prominent populariser of biological science to the public. Three aspects deserve special mention:

Personal influence

- In the early 20th century he was one of the minority of biologists^[24] who believed that natural selection was the main driving force of evolution, and that evolution occurred by small steps and not by saltation (jumps). These opinions are now standard.^[25] Though his time as an academic was quite brief, he taught and encouraged a number of evolutionary biologists at the University of Oxford in the 1920s. Charles Elton (ecology), Alister Hardy (marine biology) and John Baker (cytology) all became highly successful, and Baker eventually wrote Huxley's Royal Society obituary memoir.^[26] Perhaps the most significant was Edmund Brisco Ford, who founded a field of research called ecological genetics, which played a role in the evolutionary synthesis. Another important disciple was Gavin de Beer, who wrote on evolution and development, and became Director of the Natural History Museum. Both these fine scholars had attended Huxley's lectures on genetics, experimental zoology (including embryology) and ethology. Later, they became his collaborators, and then leaders in their own right.
- In an era when scientists did not travel so frequently as today, Huxley was an exception, for he travelled widely in Europe, Africa and the USA. He was therefore able to learn from and influence other scientists, naturalists and administrators. In the USA he was able to meet other evolutionists at a critical time in the reassessment of natural selection. In Africa he was able to influence colonial administrators about education and wild-life conservation. In Europe, through UNESCO, he was at the centre of the post-World War II revival of education. In Russia, however, his experiences were mixed. His initially favourable view was changed by his growing awareness of Stalin's murderous repression, and the Lysenko affair.^[27] There seems little evidence that he had any effect on the Soviet Union, and the same could be said for some other Western scientists.

"Marxist-Leninism had become a dogmatic religion... and like all dogmatic religions, it had turned from reform to persecution."^[28] 

Evolutionary synthesis

- Huxley was one of the main architects of the new evolutionary synthesis which took place around the time of World War II. The synthesis of genetic and population ideas produced a consensus which reigned in biology from about 1940, and which is still broadly tenable.

"The most informative episode in the history of evolutionary biology was the establishment of the 'neo-Darwinian synthesis'." Berry and Bradshaw, 1992.^[29] The synthesis was brought about "not by one side being proved right and the others wrong, but by the exchange of the most viable components of the previously competing research strategies". Ernst Mayr, 1980.^[30]

- Huxley's first 'trial run' was the treatment of evolution in the *Science of Life* (1929–30), and in 1936 he published a long and significant paper for the British Association.^[31] In 1938 came three lengthy reviews on major evolutionary topics.^{[32][33][34]} Two of these papers were on the subject of sexual selection, an idea of Darwin's whose standing has been revived in recent times.^{[35][36]} Huxley thought that sexual selection was "...merely an aspect of natural selection which... is concerned with characters which subserve mating, and are usually sex-limited". This rather grudging acceptance of sexual selection was influenced by his studies on the courtship of the Great Crested Grebe (and other birds that pair for life): the courtship takes place mostly *after* mate selection, not before.
- Now it was time for Huxley to tackle the subject of evolution at full length, in what became the defining work of his life. His role was that of a synthesiser, and it helped that he had met many of the other participants. His book *Evolution: the modern synthesis* was written whilst he was Secretary to the Zoological Society, and made use of his remarkable collection of reprints covering the first part of the century. It was published in 1942. Reviews of the book in learned journals were little short of ecstatic; the *American Naturalist* called it "The outstanding evolutionary treatise of the decade, perhaps of the century. The approach is thoroughly scientific; the command of basic information amazing".^{[37][38]}
- Huxley's main co-respondents in the modern evolutionary synthesis are usually listed as Ernst Mayr, Theodosius Dobzhansky, George Gaylord Simpson, Bernhard Rensch, Ledyard Stebbins and the population geneticists J.B.S. Haldane, Ronald Fisher and Sewall Wright.
However, at the time of Huxley's book several of these had yet to make their distinctive

contribution. Certainly, for Huxley, E.B. Ford and his co-workers in ecological genetics were at least as important; and Cyril Darlington, the chromosome expert, was a notable source of facts and ideas.

An analysis of the 'authorities cited' index of *Evolution the modern synthesis* shows indirectly those whom Huxley regarded as the most important contributors to the synthesis up to 1941 (the book was published in 1942, and references go up to 1941).

The authorities cited 20 or more times are:

Darlington, Darwin, Dobzhansky, Fisher, Ford, Goldschmidt, Haldane, J.S. Huxley, Muller, Rensch, Turrill, Wright.

This list contains a few surprises. Goldschmidt was an influential geneticist who advocated evolution by saltation, and was sometimes mentioned in disagreement. Turrill provided Huxley with botanical information. The list omits three key members of the synthesis who are listed above: Mayr, Stebbins the botanist and Simpson the palaeontologist. Mayr gets 16 citations and more in the two later editions; all three published outstanding and relevant books some years later, and their contribution to the synthesis is unquestionable. Their lesser weight in Huxley's citations was caused by the early publication date of his book. Huxley's book is not strong in palaeontology, which illustrates perfectly why Simpson's later works were such an important contribution.

- It was Huxley who coined the terms *the new synthesis* and *evolutionary synthesis*;^[39] he also invented the term *cline* in 1938 to describe species whose members fall into a series of sub-species with continuous change in characters over a geographical area.^{[40][41]} The classic example of a cline is the circle of subspecies of the gull *Larus* round the Arctic zone. This cline is an example of a *ring species*. Some of Huxley's last contributions to the evolutionary synthesis were on the subject of ecological genetics. He noted how surprisingly widespread polymorphism is in nature, with visible morphism much more prevalent in some groups than others. The immense diversity of colour and pattern in small bivalve molluscs, brittlestars, sea-anemones, tubicular polychaetes and various grasshoppers is perhaps maintained by making recognition by predators more difficult.^{[42][43][44]}


Evolutionary progress

- He always believed that on a broad view evolution led to advances in organisation. *Progress without a goal* was one of his phrases, to distinguish his point of view from classical Aristotelian teleology. "The ordinary man, or at least the ordinary poet, philosopher and theologian, always was anxious to find purpose in the evolutionary process. I believe this reasoning to be totally false."^[45] The idea of evolutionary progress was subjected to some fierce criticism in the latter

part of the twentieth century. Cladists, for example, were (and are) strongly against any suggestion that a group could be scientifically described as 'advanced' and others as 'primitive'. For them, and especially for the radical group of *transformed cladists*, there is no such thing as an advanced group, they are derived or apomorphic. Primitive groups are plesiomorphic. Ironically, it was Huxley who invented the terms clade and grades.^{[46][47][48]}

However, to take a rather extreme case, it would seem strange to say that when man is compared to bacteria, that mankind is not a vastly more complex and advanced form of life; or that the invasion of the land by plants and animals was not a great advance in the history of life on this planet. On this issue Julian was at the opposite end of the spectrum from his grandfather, who was, at least for the first half of his career, a propagandist for 'persistent types', getting close to denying any advances at all.^{[49][50]}

- Huxley argued his case many times, even in his most important works. In the final chapter of his *Evolution the modern synthesis* he defines evolutionary progress as "a raising of the upper level of biological efficiency, this being defined as increased control over and independence of the environment,"^[51]

Evolution in action discusses evolutionary progress at length: "Natural selection plus time produces biological improvement... 'Improvement' is not yet a recognised technical term in biology... however, living things are improved during evolution... Darwin was not afraid to use the word for the results of natural selection in general... I believe that improvement can become one of the key concepts in evolutionary biology." 

"Can it be scientifically defined? Improvements in biological machinery... the limbs and teeth of grazing horses... the increase in brain-power... The eyes of a dragon-fly, which can see all round [it] in every direction, are an improvement over the mere microscopic eye-spots of early forms of life."^[52]


"[Over] the whole range of evolutionary time we see general advance — improvement in all the main properties of life, including its general organization. 'Advance' is thus a useful term for long-term improvement in some general property of life. [But]

improvement is not universal. Lower forms manage to survive alongside higher".^[53]

These excerpts are much abbreviated, but give some idea of his way of thinking. He addresses the topic of 'persistent types' (living fossils) later in the same book (pp 126–8).

- The question of evolutionary advancement has quite a history. Of course, pre-Darwin, it was believed without question that Man stood at the head of a pyramid (scala naturae). The matter is not so simple with evolution by natural selection; Darwin's own opinion varied from time to time. In the *Origin* he wrote "And as natural selection

works **by and for** the good of each being, all corporeal and mental endowments will tend to progress towards perfection".^[54] This was much too strong; as Sober remarks, there is nothing in the theory of natural selection which demands that selection must produce an increase in complexity or any other measure of advancement. It is merely compatible with the theory that this might happen.^[55] Elsewhere **Darwin** admits that "naturalists have not yet defined to each other's satisfaction what is meant by **high and low forms**" (p336); nor have they now – this is one of the problems. Other evolutionary biologists have had similar thoughts to Huxley: G. Ledyard Stebbins^[56] and Bernhard Rensch^[57], for example. The term used to describe progressive evolution is anagenesis, though this term does not necessarily include the idea of improvement.

The objective description of complexity was one of the issues addressed by cybernetics in the 1950s. The idea that advanced machines (including living beings) could exert more control over their environments and operate in a wider range of situations perhaps serves as a basis for making the terms such as 'advanced' amenable to more exact definition.^{[58][59]} This is a debate that continues today. 

For a modern survey of the idea of progress in evolution see Nitecki^[60] and Dawkins.^[61]

Secular humanism

Huxley's humanism^[62] came from his appreciation that **mankind** was in **charge** of its **own destiny** (at least in principle), and this raised the need for a sense of direction and a system of ethics. His **grandfather** T.H. Huxley, when faced with similar problems, had **promoted agnosticism**, but **Julian chose humanism** as being more directed to supplying a basis for ethics. Julian's thinking went along these lines: "The critical point in the evolution of man... was when he acquired the use of [language]... **Man's** development is potentially open... He has **developed a new method of evolution**: the transmission of **organized experience** by way of tradition, which... largely **overrides** the automatic process of **natural selection** as the agent of change".^[63] Both Huxley and his grandfather gave Romanes Lectures on the possible connection between evolution and ethics.^[64] (see evolutionary ethics)

Huxley had a close association with the British rationalist and secular humanist movements. He was an Honorary Associate of the Rationalist Press Association from 1927 until his death, and on the formation of the British Humanist Association in 1963 became its first President, to be succeeded by AJ Ayer in 1965. He was also closely involved with the International Humanist and Ethical Union. Many of Huxley's books address humanist themes. In 1962 Huxley accepted the American Humanist Association's annual "**Humanist** of

the "Year" award.

Huxley also presided over the founding Congress of the International Humanist and Ethical Union and served with John Dewey, Albert Einstein and Thomas Mann on the founding advisory board of the First Humanist Society of New York.

Religious naturalism

Huxley wrote that "There is no separate supernatural realm: all phenomena are part of one natural process of evolution. There is no basic cleavage between science and religion;... I believe that [a] drastic reorganization of our pattern of religious thought is now becoming necessary, from a god-centered to an evolutionary-centered pattern".^[65] Some believe the appropriate label for these views is religious naturalism.^[66]

"Many people assert that this abandonment of the god hypothesis means the abandonment of all religion and all moral sanctions. This is simply not true. But it does mean, once our relief at jettisoning an outdated piece of ideological furniture is over, that we must construct something to take its place."^[65]

Eugenics and race

Huxley was a prominent member of the British Eugenics Society,^[67] and was Vice-President (1937–1944) and President (1959–1962). He thought eugenics was important for removing undesirable variants from the human gene pool; but at least after World War II he believed race was a meaningless concept in biology, and its application to humans was highly inconsistent.^[68]

Huxley was an outspoken critic of the most extreme eugenicism in the 1920s and 1930s (the stimulus for which was the greater fertility of the 'feckless' poor compared to the 'responsible' prosperous classes). He was, nevertheless, a leading figure in the eugenics movement (see, for example, Eugenics manifesto). He gave the Galton memorial lecture twice, in 1936 and 1962. In his writing he used this argument several times: *no-one doubts the wisdom of managing the germ-plasm of agricultural stocks, so why not apply the same concept to human stocks?* "The agricultural analogy appears over and over again as it did in the writings of many American eugenicists."^[69]

Huxley was one of many intellectuals at the time who believed that the lowest class in

society was genetically inferior. This passage, from 1941, puts the view forcefully:

"The lowest strata are reproducing too fast. Therefore... they must not have too easy access to relief or hospital treatment lest the removal of the last check on natural selection should make it too easy for children to be produced or to survive; long unemployment should be a ground for sterilisation." [70]

Here, he does not demean the working class in general, but aims for "the virtual elimination of the few lowest and most degenerate types".^[71] The sentiment is not at all atypical of the time, and similar views were held by many geneticists (William E. Castle, C.B. Davenport, H.J. Muller are examples), and by other prominent intellectuals.

Concerning a public health and racial policy in general, Huxley wrote that "...unless [civilised societies] invent and enforce adequate measures for regulating human reproduction, for controlling the quantity of population, and *at least preventing the deterioration of quality of racial stock*, they are doomed to decay..."^[72] and remarked how biology should be the chief tool for rendering social politics scientific.

In the opinion of Duvall, "His views fell well within the spectrum of opinion acceptable to the English liberal intellectual elite. He shared *Nature's* enthusiasm for birth control, and 'voluntary' sterilization."^[73] However, the word 'English' in this passage is unnecessary: such views were widespread.^[74] Duvall comments that Huxley's enthusiasm for centralised social and economic planning and anti-industrial values was common to leftist ideologists during the inter-war years. Towards the end of his life Huxley himself must have recognised how unpopular these views became after the end of World War II. In the two volumes of his *autobiography* there is *no mention* of *eugenics* in the index, nor is *Galton* mentioned; and the subject has also been omitted from many of the obituaries and biographies. An exception is the proceedings of a conference organised by the British Eugenics Society.^[75]

In response to the rise of European fascism in the 1930s he was asked to write *We Europeans* with the ethnologist A.C. Haddon, zoologist Alexander Carr-Saunders and historian of science Charles Singer. Huxley suggested the word 'race' be replaced with ethnic group. After the Second World War he was instrumental in producing the UNESCO statement *The Race Question*,^[76] which asserted that:

"A race, from the biological standpoint, may therefore be defined as one of the group of populations constituting the species *Homo sapiens*"... "Now what has the

scientist to say about the groups of mankind which may be recognized at the present time? Human races can be and have been differently classified by different anthropologists, but at the present time most anthropologists agree on classifying the greater part of present-day mankind into three major divisions, as follows: The Mongoloid Division; The Negroid Division; The Caucasoid Division." ...

"Catholics, Protestants, Moslems and Jews are not races..."

In 1957 Huxley coined the term "transhumanism" to describe the view that man should better himself through science and technology, possibly including eugenics, but also, importantly, the improvement of the social environment.

Public life and popularisation

Huxley was always able to write well, and was ever willing to address the public on scientific topics. Well over half his books are addressed to an educated general audience, and he wrote often in periodicals and newspapers. The most extensive bibliography of Huxley lists some of these ephemeral articles, though there are others unrecorded.^[77]

These articles, some reissued as *Essays of a biologist* (1923), probably led to the invitation from H.G. Wells to help write a comprehensive work on biology for a general readership, *The Science of Life*.^[16] This work was published in stages in 1929–30,^[78] and in one volume in 1931. Of this Robert Olby said "Book IV *The essence of the controversies about evolution* offers perhaps the clearest, most readable, succinct and informative popular account of the subject ever penned. It was here that he first expounded his own version of what later developed into the evolutionary synthesis".^{[79][80]} In his memoirs, Huxley says that, all told, he made close to £10,000 out of the book.^[81]

In 1934 Huxley collaborated with the naturalist Ronald Lockley to create for Alexander Korda the world's first natural history documentary *The Private Life of the Gannets*. For the film, shot with the support of the Royal Navy around Grassholm off the Pembrokeshire coast, they won an Oscar for best documentary.^[82]

Huxley had given talks on the radio since the 1920s, followed by written versions in *The Listener*. In later life, he became known to an even wider audience through television. In 1939 the BBC asked him to be a regular panelist on a Home Service general knowledge show, *The Brains Trust*, in which he and other panelists were asked to discuss questions submitted by listeners. The show was commissioned to keep up war time morale, by

preventing the war from "disrupting the normal discussion of interesting ideas". The audience was not large for this somewhat elite program; however, listener research ranked Huxley the most popular member of the Brains Trust from 1941 to 1944.^{[83][84]} Later, he was a regular panelist on one of the BBC's first quiz shows (1955) *Animal, Vegetable, Mineral?* in which participants were asked to talk about objects chosen from museum and university collections.

In his essay *The Crowded World* Huxley was openly critical of Communist and Catholic attitudes to birth control, population control and overpopulation. Based on variable rates of compound interest, Huxley predicted a probable world population of 6 billion by 2000. The United Nations Population Fund marked 12 October 1999 as The Day of Six Billion.^{[85][86]}

Terms coined

Huxley's use of language was highly skilled, and when no word seemed to suit he invented one. These are the most significant:

- Clade 1957: a monophyletic taxon; a single species and its descendents.
- Cline 1938: a gradient of gene frequencies in a population, along a given transect.
- Grade 1959: a level of evolutionary advance.
- Ethnic group 1936: as opposed to race
- Morph 1942: as more correct and simpler than polymorph.
- Ritualization 1914: formalised activities in bird behaviour, caused by inherited behaviour chains.
- Transhumanism 1957: the improvement of human beings.

Titles and phrases

Huxley always chose his titles carefully. He wrote about fifty books (depending on how you count them), and these themes are characteristic:

- *Religion without revelation* (1927, 1957)
- *The new systematics* (1940)
- *The uniqueness of man* (1941)
- *Evolution: the modern synthesis* (1942)
- *Evolutionary ethics* (1943)
- *Evolution as a process* (1954)
- *Essays of a humanist* (1964)

- *The future of man* (1966)

References

1. ^ Personal communication, Julian Huxley to Ronald Clark, the biographer of the Huxley family.
2. ^ Huxley J. 1970. *Memories*. George Allen & Unwin, London, p50.
3. ^ Burkhardt, Richard W. 1993. Huxley and the rise of ethology. In Waters C.K. and Van Helden A. (eds) *Julian Huxley: biologist and statesman of science*. Rice University Press, Houston.
4. ^ 'K': so designated in *Memories* (1970), but now known to be Kathleen Fordham, whom he met when she was a pupil at his mother's school Prior's Field. Huxley suffered from a conflict between desire and guilt. (Dronamraju K.R 1993. *If I am to be remembered: the life & work of Julian Huxley*. World Scientific, Singapore, pp 9–10).
5. ^ Huxley, Julian 1970. *Memories*, chapters 7 and 8.
6. ^ Huxley, Juliette 1986. *Leaves of the tulip tree: autobiography*. Murray, London. Chapter 4.
7. ^ Ford E.B. 1989. Scientific work by Sir Julian Huxley FRS. In Keynes M & Harrison G.A. *Evolutionary studies: a centenary celebration of the life of Julian Huxley*. Macmillan, London.
8. ^ Huxley, Juliette 1986. *Leaves of the tulip tree*. Murray, London, p130 et seq.
9. ^ Waters C.K. & Van Helden A. (eds) 1993. *Julian Huxley: biologist and statesman of science*. Houston. p285, notes 50 and 51.
10. ^ Huxley, Juliette 1986. *Leaves of the tulip tree*. Murray, London p170.
11. ^ Kevles D.J. 1993. Huxley and the popularization of science. In Waters C.K. and Van Helden A. (eds) *Julian Huxley: biologist and statesman of science*. Houston.
12. ^ Huxley, Julian. 1970. *Memories*. George Allen & Unwin, London, p231.
13. ^ Armytage W.H.G. 1989. The first Director-General of UNESCO. In Keynes M. and Harrison G.A. (eds) 1989. *Evolutionary studies: a centenary celebration of the life of Julian Huxley*. Macmillan, London, p188.
14. ^ Huxley J. 1947. *UNESCO: its purpose and its philosophy*. UNESCO C/6 15th September 1947. Public Affairs Press, Washington.
15. ^ Armytage W.H.G. 1989. The first Director-General of UNESCO. In Keynes M. and Harrison G.A. (eds) 1989. *Evolutionary studies: a centenary celebration of the life of Julian Huxley*. Macmillan, London.
16. ^ ^a ^b Huxley, Juliette 1986. *Leaves of the tulip tree*. Murray, London.
17. ^ Huxley J. 1949. *Soviet genetics and World science: Lysenko and the meaning of heredity*. Chatto & Windus, London. In USA as *Heredity, East and West*. Schuman, N.Y.
18. ^ Huxley, Julian. 1972. *Memories II*. George Allen & Unwin, London, p28.
19. ^ Huxley, Juliette 1986. *Leaves of the tulip tree*. Murray, London. p204
20. ^ Bowler, Peter J. 2003. *Evolution: The History of an Idea*, 3rd ed. University of California Press. p256–273 ISBN 0-52023693-9.
21. ^ Waters C.K. & Van Helden A. (eds) 1992. *Julian Huxley: biologist and statesman of science*. Rice, Houston TX. p144
22. ^ Ruse, Michael 1997. Thomas Henry Huxley and the status of evolution as science, in Barr, Alan

- P. (ed) *Thomas Henry Huxley's place in science and letters: centenary essays*. Athens, Georgia.
23. ^ Duvall C. 1992. From a Victorian to a modern: Julian Huxley and the English intellectual climate. In Waters C.K. and Van Helden A. (eds) *Julian Huxley: biologist and statesman of science*. Rice University Press, Houston.
 24. ^ Bowler P.J. 1983. *The eclipse of Darwinism: anti-Darwinian evolutionary theories in the decades around 1900*. Johns Hopkins, Baltimore.
 25. ^ Bowler P.J. 2003. *Evolution: the history of an idea*. 3rd ed revised and expanded, University of California Press.
 26. ^ Baker, John R. 1978. *Julian Huxley, scientist and world citizen, 1887–1975*. UNESCO, Paris.
 27. ^ Huxley, J.S. 1949. *Soviet genetics and world science: Lysenko and the meaning of heredity*. Chatto & Windus, London. In USA as *Heredity, East and West*. Schuman, N.Y. (1949).
 28. ^ Huxley J. 1970. *Memories*. George Allen & Unwin, London. Chapter XIX 'Russia 1945', p287.
 29. ^ Berry R.J. and Bradshaw A.D. 1992. Genes in the real world. In Berry R.J. et al. (eds) *Genes in ecology*. Blackwell, Oxford.
 30. ^ Mayr E. 1980. Some thoughts on the history of the evolutionary synthesis. In Mayr E. and Provine W.B. *The evolutionary synthesis*. Harvard. pp 1–80
 31. ^ Huxley J.S. 1936. Natural selection and evolutionary progress. *Proceedings of the British Association* **106**, 81–100.
 32. ^ Huxley J. 1938a. Threat and warning colouration with a general discussion of the biological function of colour. *Proc Eighth Int Ornithological Congress*, Oxford 1934 pp 430–55
 33. ^ Huxley J. 1938b. Darwin's theory of sexual selection and the data subsumed by it, in the light of recent research. *American Naturalist* **72**, 416–33.
 34. ^ Huxley J.S. 1938c. The present standing of the theory of sexual selection. In G.R. de Beer (ed) *Evolution: Essays on aspects of evolutionary biology* pp 11–42. Oxford.
 35. ^ Cronin, Helena (1991). *The ant and the peacock: altruism and sexual selection from Darwin to today*. Cambridge University Press.
 36. ^ Anderson M. 1994. *Sexual selection*. Princeton.
 37. ^ Hubbs C.L. 1943. Evolution the new synthesis. *American Naturalist* **77**, 365–68.
 38. ^ Kimball R.F. 1943. The great biological generalization. *Quarterly Review of Biology* **18**, 364–67 [another review of *Ev. the modern synthesis*].
 39. ^ Huxley J. 1942. *Evolution: the modern synthesis* (2nd ed 1963, 3rd ed 1974)
 40. ^ Huxley J. 1938d. Clines: an auxiliary method in taxonomy. *Bijdragen tot de Dierkunde* (Leiden) **27**, 491–520.
 41. ^ Huxley J. 1938e. Clines: an auxiliary taxonomic principle. *Nature* **142**, 219–220.
 42. ^ Huxley J.S. 1955. Morphism and evolution. *Heredity* **9**, 1–52.
 43. ^ Huxley J. 1955. Morphism in birds. In Portmann A. & Sutter E. (eds) *Acta XI Cong Int Ornith* (Basel 1954) pp 309–328.
 44. ^ Moment G.B. 1962. Reflexive selection: a possible answer to an old puzzle. *Science* **136**, 262.
 45. ^ Huxley J. 1942. *Evolution: the modern synthesis* Allen & Unwin, London, p576.
 46. ^ Huxley J. 1957. The three types of evolutionary process. *Nature* **180**, 454–5.
 47. ^ Huxley J. 1959. Clades and grades. In Cain A.J. (ed) *Function and taxonomic importance*. Systematics Association, London.

48. ^ Dupuis, Claude 1984. Willi Hennig's impact on taxonomic thought. *Annual Review of Ecology and Systematics* **15**: 1–24.
49. ^ Huxley T.H. 1859. On the persistent types of animal life. *Proceedings of the Royal Institution*.
50. ^ Desmond A. 1982. *Archetypes and ancestors: palaeontology in Victorian London 1850–1875*. Blond & Briggs, London.
51. ^ Huxley J. 1942. *Evolution: the modern synthesis*, Chapter 10 Evolutionary progress.
52. ^ Huxley J. 1953. *Evolution in action*. Chatto & Windus, London, pp 62–64.
53. ^ Huxley J.S. 1953. *Evolution in action*. Chatto & Windus, London. p65.
54. ^ Darwin C. *On the origin of species by means of natural selection*. Murray, London. p489
55. ^ Sober E. 1984. *The nature of selection: evolutionary theory in philosophical focus*. Chicago. p172
56. ^ Stebbins, G. Ledyard 1969. *The basis of progressive evolution*. Chapel Hill.
57. ^ Rensch B. 1960. *Evolution above the species level*. Columbia, N.Y.
58. ^ Ashby, W. Ross. 1956. *Introduction to cybernetics*.
59. ^ Simon H.A. 1962. The architecture of complexity. *Proc Am Philos Soc* **106**, 467–82; reprinted in Simon H.A. 1981. *The sciences of the artificial*. 2nd ed MIT, Cambridge MA.
60. ^ Nitecki M. (ed) 1989. *Evolutionary progress*. University of Chicago Press, Chicago.
61. ^ Dawkins R. 1992. Higher and lower animals: a diatribe. In Fox-Keller E. and Lloyd E. (eds) *Keywords in evolutionary biology*. Harvard.
62. ^ Peter Medawar chose the term *evolutionary humanism* to distinguish this from other uses of the term 'humanism'. Bullock, Alan et al. 1988. *Fontana dictionary of modern thought*. 2nd ed. Fontana, London. p293
63. ^ Huxley J.S. 1953. *Evolution in action*. Chatto & Windus, London, p132.
64. ^ Huxley T.H. and Huxley J. 1947. *Evolution and ethics 1893–1943*. Pilot, London. In USA as *Touchstone for ethics* Harper, N.Y. [includes text from the Romanes lectures of both T.H. Huxley and Julian Huxley]
65. ^ ^a ^b Huxley, Julian. 1969. The New Divinity in *Essays of a Humanist*'. Penguin, London.
66. ^ Barlow C. 2003. *A Tribute to Julian Huxley*, and others (<http://www.thegreatstory.org/ReligiousNaturalism.html>) , page 3, retrieved 5/08/2009
67. ^ Mazumdar, Pauline 1992. *Eugenics, human genetics and human failings: the Eugenics Society, its sources and its critics in Britain*. Routledge, London.
68. ^ Allen, Garland E. 1992. Julian Huxley and the eugenical view of human evolution. In Waters C.K. & Van Helden A. (eds) *Julian Huxley: biologist and statesman of science*. Rice, Houston TX. p206–7
69. ^ Allen, Garland E. 1992. Julian Huxley and the eugenical view of human evolution. In Waters C.K. & Van Helden A. (eds) *Julian Huxley: biologist and statesman of science*. Rice, Houston TX. p221
70. ^ Huxley J.S. 1947. *Man in the modern world*. Chatto & Windus, London. Originally published in *The uniqueness of Man*, 1941.
71. ^ Hubback D. Julian Huxley and eugenics. 1989. In Keynes M. and Harrison G.A. (eds) *Evolutionary studies: a centenary celebration of the life of Julian Huxley*. Macmillan, London.
72. ^ Huxley, Julian. 1926. *Essays in Popular Science*. London: Chatto & Windus, ix.

73. ^ Duvall C. 1992. From a Victorian to a modern: Julian Huxley and the English intellectual climate. In Waters C.K. and Van Helden A. (eds) *Julian Huxley: biologist and statesman of science*. Rice University Press, Houston. p24
74. ^ Kevles D.J. 1995. *In the name of eugenics: genetics and the uses of human heredity*. Harvard 1995.
75. ^ Keynes, Milo and Harrison, G. Ainsworth (eds) 1989. *Evolutionary studies: a centenary celebration of the life of Julian Huxley*. Proceeding of the 24th annual symposium of the Eugenics Society, London 1987. Macmillan, London.
76. ^ The Race question; UNESCO and its programme; Vol.:3; 1950 (<http://unesdoc.unesco.org/images/0012/001282/128291eo.pdf>)
77. ^ Baker J.R. and Green J-P. 1978. *Julian Huxley: Man of science and citizen of the world 1887–1975*. UNESCO, bibliography, especially pp 107–174.
78. ^ Andrew Huxley (in Keynes M. and Harrison G.A. eds 1989. *Evolutionary studies: a centenary celebration of the life of Julian Huxley*. Macmillan, London. p19) says it was originally published in 31 fortnightly parts in 1929–30; others (Waters C.K. & Van Helden A. eds 1993. *Julian Huxley: biologist and statesman of science*. Houston. bibliography) say it was published in three volumes 1929–30. Both may be correct: see publishing history of *The Science of Life* in Works section.
79. ^ Olby R. in Waters, C. Kenneth and Van Helden, Albert (eds) 1993. *Julian Huxley: biologist and statesman of science*. Rice University Press, Houston.
80. ^ Olby R. 2004. Huxley, Sir Julian Sorell (1887–1975). *Oxford Dictionary of National Biography*.
81. ^ Huxley J. 1970. *Memories*. George Allen & Unwin, London, p156.
82. ^ Academy Award for Live Action Short Film 1937 (One-Reel) Skibo Productions – The Private Life of the Gannets.
83. ^ Briggs, Asa. 1970. *The history of broadcasting in the UK*, vol 3 *The war of words*. Oxford. p581–2
84. ^ Thomas H. 1944. *Britain's Brains Trust*. Chapman & Hall, London.
85. ^ Huxley, Thomas and Julian, and Osborn, F.R. 1958. *Three essays on population*. Mentor.
86. ^ Huxley, Julian 1950. Population and human destiny. *Harpers*, September 1950.

Works

- *The individual in the animal kingdom* (1911)
- *The courtship habits of the Great Crested Grebe* (1914) [a landmark in ethology]
- *Essays of a Biologist* (1923)
- *Essays in Popular Science* (1926)
- *The stream of life* (1926)
- *Animal biology* (with J.B.S. Haldane, 1927)
- *Religion without revelation* (1927, revised edition 1957)
- *The tissue-culture king* (1927) [science fiction]
- *Ants* (1929)

- *The science of life: a summary of contemporary knowledge about life and its possibilities* (with H.G. & G.P. Wells, 1929–30). First issued in 31 fortnightly parts published by Amalgamated Press, 1929–31, bound up in three volumes as publication proceeded. First issued in one volume by Cassell in 1931, reprinted 1934, 1937, popular edition, fully revised, 1938. Published as separate volumes by Cassell 1934–37: I *The living body*. II *Patterns of life* (1934). III *Evolution—fact and theory*. IV *Reproduction, heredity and the development of sex*. V *The history and adventure of life*. VI *The drama of life*. VII *How animals behave* (1937). VIII *Man's mind and behaviour*. IX *Biology and the human race*. Published in New York by Doubleday, Doran & Co. 1931, 1934, 1939; and by The Literary Guild 1934. Three of the Cassell spin-off books were also published by Doubleday in 1932: *Evolution, fact and theory*; *The human mind and the behavior of Man*; *Reproduction, genetics and the development of sex*.
- *Bird-watching and bird behaviour* (1930)
- *An introduction to science* (with Edward Andrade, 1931–34)
- *What dare I think?: the challenge of modern science to human action and belief*. Chatto & Windus, London; Harper, N.Y. (1931)
- *Africa view* (1931)
- *The captive shrew and other poems* (1932)
- *Problems of relative growth* (1932)
- *A scientist among the Soviets* (1932)
- *If I were Dictator*. Methuen, London; Harper, N.Y. (1934)
- *Scientific research and social needs* (1934)
- *Elements of experimental embryology* (with Gavin de Beer, 1934)
- *Thomas Huxley's diary of the voyage of HMS Rattlesnake* (1935)
- *We Europeans* (with A.C. Haddon, 1936)
- *Animal language* (photographs by Ylla, includes recordings of animal calls: 1938, reprinted 1964)
- The present standing of the theory of sexual selection. In Gavin de Beer (ed) *Evolution: Essays on aspects of evolutionary biology* (pp 11–42). Oxford: Clarendon Press (1938)
- *The living thoughts of Darwin* (1939)
- *The new systematics*. Oxford. (1940) [this multi-author volume, edited by Huxley, is one of the foundation stones of the 'New Synthesis', with essays on taxonomy, evolution, natural selection, Mendelian genetics and population genetics]
- *Democracy marches*. Chatto & Windus, London; Harper N.Y. (1941)
- *The uniqueness of man*. Chatto & Windus, London. (1941; reprint 1943). U.S. as *Man stands alone*. Harper, N.Y. 1941.
- *On living in a revolution*. Harper, N.Y. (1944)
- *Evolution: the modern synthesis*. Allen & Unwin, London. (1942, reprinted 1943, 1944,

1945, 1948, 1955; 2nd ed, with new introduction and bibliography by the author, 1963; 3rd ed, with new introduction and bibliography by nine contributors, 1974). U.S. first edition by Harper, 1943. [this summarises research on all topics relevant to evolution up to the Second World War]. New edition by MIT Press in 2010 with Foreword by Massimo Pigliucci and Gerd B. Müller.

- *Evolutionary ethics* (1943)
- *TVA: Adventure in planning* (1944)
- *Evolution and ethics 1893–1943*. Pilot, London. In USA as *Touchstone for ethics* Harper, N.Y. (1947) [includes text from both T.H. Huxley and Julian Huxley]
- *Man in the modern world* (1947) eBook (<http://www.archive.org/details/ManInTheModernWorld>) [essays selected from *The uniqueness of man* (1941) and *On living in a revolution* (1944)]
- *Soviet genetics and World science: Lysenko and the meaning of heredity*. Chatto & Windus, London. In USA as *Heredity, East and West*. Schuman, N.Y. (1949).
- *Evolution in action* (1953)
- *Evolution as a process* (with Hardy A.C. and Ford E.B. eds.) Allen & Unwin, London. (1954)
- *From an antique land: ancient and modern in the Middle East*. Parrish, London (1954, revised 1966)
- *Kingdom of the beasts* (with W. Suschitzky, 1956)
- *Biological aspects of cancer* (1957)
- *New bottles for new wine* Chatto & Windus, London; Harper N.Y. (1957); repr as *Knowledge, morality, destiny*. N.Y. (1960)
- *The humanist frame* (as editor, 1961)
- *The coming new religion of humanism* (1962)
- *Essays of a humanist* (1964) reprinted 1966, 1969, 1992: ISBN 0-87975-778-7
- *The human crisis* (1964)
- *Darwin and his world* (with Bernard Kettlewell, 1965)
- *Aldous Huxley 1894–1963: a memorial volume*. (as editor, 1965)
- *The future of man: evolutionary aspects*. (1966)
- *The wonderful world of evolution* (1969)
- *Memories* (2 vols 1970 & 1973) [his autobiography]
- *The Mitchell Beazley Atlas of World Wildlife*. Mitchell Beazley, London; also published as *The Atlas of World Wildlife*. Purnell, Cape Town. (1973)

Contributions

- Eliot Howard, *Territory in bird life*. Collins (1948 edition) – Foreword, with James

Fisher

Biographies

- Baker John R. 1978. *Julian Huxley, scientist and world citizen, 1887–1975*. UNESCO, Paris.
- Clark, Ronald W. 1960. *Sir Julian Huxley*. Phoenix, London.
- Clark, Ronald W. 1968. *The Huxleys*. Heinemann, London.
- Dronamraju, Krishna R. 1993. *If I am to be remembered: the life & work of Julian Huxley, with selected correspondence*. World Scientific, Singapore.
- Green, Jens-Peter 1981. *Krise und Hoffnung, der Evolutionshumanismus Julian Huxleys*. Carl Winter Universitätsverlag.
- Huxley, Julian. 1970, 1973. *Memories and Memories II*. George Allen & Unwin, London.
- Huxley, Juliette 1986. *Leaves of the tulip tree*. Murray, London [her autobiography includes much about Julian]
- Keynes, Milo and Harrison, G. Ainsworth (eds) 1989. *Evolutionary studies: a centenary celebration of the life of Julian Huxley*. Proceeding of the 24th annual symposium of the Eugenics Society, London 1987. Macmillan, London.
- Olby, Robert 2004. Huxley, Sir Julian Sorell (1887–1975). In *Oxford Dictionary of National Biography*. (2680 words)
- Waters, C. Kenneth and Van Helden, Albert (eds) 1993. *Julian Huxley: biologist and statesman of science*. Rice University Press, Houston. [scholarly articles by historians of science on Huxley's work and ideas]

External links

- Short biography. (<http://noosphere.cc/huxleymenu.html>)
- "Guide to the Julian Sorell Huxley Papers, 1899–1980" (<http://library.rice.edu/collections/WRC/finding-aids/manuscripts/0050>) (Woodson Research Center, Fondren Library, Rice University, Houston, TX, USA)—"Julian Huxley papers documenting his career as a biologist and a leading intellectual. 180 boxes of materials ranging in date from 1899–1980." Extent: 91 linear feet.
- "Transhumanism" (<http://www.transhumanism.org/index.php/WTA/more/huxley>) in *New Bottles for New Wine*. London: Chatto & Windus, 1957.
- "The New Divination" (http://www.update.uu.se/~fbendz/library/jh_divin.htm) in *Essays of a Humanist*. London: Chatto & Windus, 1964.

- Fullerian Professorships
(<http://www.johnmadjackfuller.homestead.com/fullerianprofessors.html>)

Awards

Political offices

Preceded by
n.a.

UNESCO Director-General
1946–1948

Succeeded by
Jaime Torres Bodet

Academic offices

Preceded by
Joseph Barcroft

Fullerian Professor of Physiology
1927–1930

Succeeded by
J.B.S. Haldane

Professional and academic associations

Preceded by
Peter Chalmers Mitchell

**Secretary of the Zoological Society
of London**
1935–1942

Succeeded by
Sheffield Airey Neave

Awards and achievements

Preceded by
Louis de Broglie

Kalinga Prize
1953

Succeeded by
Waldemar Kaempffert

Preceded by
Edmund Brisco Ford

Darwin Medal
1956

Succeeded by
Gavin de Beer

Preceded by
n.a.

Darwin–Wallace Medal
1958

Succeeded by
n.a.

Preceded by
Harrison S. Brown

Lasker Award
1959

Succeeded by
Gregory Pincus

Retrieved from "http://en.wikipedia.org/wiki/Julian_Huxley"

Categories: Huxley family | English biologists | Evolutionary biologists | Developmental biologists | Ethologists | English science writers | English agnostics | English humanists | English eugenicists | Old Etonians | British Army personnel of World War I | Intelligence Corps officers | Alumni of Balliol College, Oxford | Fellows of New College, Oxford | Knights Bachelor | Fellows of the Royal Society | Kalinga Prize recipients | UNESCO Directors-General | Academics of King's College London | Secretaries of the Zoological Society of London | Zookeepers | People from London | 1887 births | 1975 deaths | People with bipolar disorder | Presenters of the Royal Institution Christmas Lectures

- This page was last modified on 18 April 2010 at 12:10.

- Text is available under the Creative Commons Attribution-ShareAlike License; additional terms may apply. See Terms of Use for details.
Wikipedia® is a registered trademark of the Wikimedia Foundation, Inc., a non-profit organization.

- [Privacy policy](#)
- [About Wikipedia](#)
- [Disclaimers](#)

Sir Julian Sorell Huxley FRS (22 June 1887 – 14 February 1975) was an English evolutionary biologist, humanist and internationalist. He was born in London, and died there. He was a proponent of natural selection, and a leading figure in the modern evolutionary synthesis. He was Secretary of the Zoological Society of London (1935–1942), the first Director of UNESCO, and a founding member of the World Wildlife Fund.