

# Darwin's Theory of Evolution Placed Before World 100 Years Ago Today

## Zoologists To Honor Date With London Meeting

Editor's note: One hundred years ago today the theory of evolution first burst on the scientific world. This year scientists of both East and West will mark the centennial as a great milestone in the advance of human knowledge. In the following dispatch Darwin's grandson, himself a famous theoretical physicist, discusses the theory and warns that overpopulation may drive the world back to the "ruthless process of natural selection."

By SIR CHARLES DARWIN  
Written for UPI  
Cambridge, Eng.—(UPI)—I was on the night of July, 1858, that the theory of evolution by natural selection was

first made known. This theory now dominates all biological thinking and its centenary is to be honored by an international congress of zoologists which will be held in London this year in mid-July.

The theory was contained in two short papers given to the Linnaean Society by my grandfather Charles Darwin, and Alfred Russell Wallace, who had independently arrived at the same conclusions.

These were two central points in the new theory. One was that the whole animal and vegetable kingdoms had evolved gradually by modification from their ancestors. This theory was not new. It had been put forward by several previous thinkers, but the weakness of their theories had been that they could give no reasonable

explanation why and how the changes had come about, and in 1858 most leading biologists believed in the fixity of species of animals and plants.

**Provided Mechanism**

The other main point of the new theory was that it provided a mechanism to explain the changes. This was natural selection, the intense competition of all living things in the struggle for life which was continually wiping out the less efficient members of any kind of animal and leaving the stage for those better equipped to survive.

It was this part of the theory that could explain how such complicated mechanisms as the human eye, or such elaborate instincts as those of the bee in a hive, could have been gradually developed.

**Conclusions Are Inferred**

The two authors had come to their conclusions quite independently of one another. Darwin had started his theory 18 years before Wallace, while serving as a naturalist on the survey ship *HMS Beagle*, and for those 18 years he had been continually and quietly working it out. This required him to acquire a first-hand knowledge of natural history.

It was not enough to look at the favorable things, but it was even more necessary to consider the unfavorable ones. Because if anybody could see one single case which could not possibly have come about by an accumulation of small variations, it would have killed the whole theory.

In those 18 years he patiently gathered a great deal of knowledge. It seems likely that for some time now he would have gone on doing so before writing it all up. When he received a quite unexpected letter, this was from Wallace who had been working at the natural history of Malay and Borneo, who wrote to him asking him to communicate a paper for publication which was to his intents exactly the same theory as the one he had been working on himself.

This situation was met by their publishing their papers together with an introduction by Charles Lyell, the leading geologist of the time, explaining what had happened.

After this each of them was to be to publish one himself and Darwin as once got to work to write up what he called an abstract of a much greater work he was planning. Though he only called it an abstract, it was in fact that famous book "The Origin of the Species." It came out in November 1859, and it at once attracted worldwide interest to the subject.

It has been said by some people that such a great change in the world's thinking could not really have come about so suddenly and that the theory must have been in the air waiting to be accepted. It is easy to feel this when a new theory has become established, but I recently heard of a fact that rather points the other way.

At the end of every year the president of the Linnaean Society used to make an address commencing with the words "I am glad to say that the theory of evolution has been accepted during the past year, and at the end of 1858 the president remarked that they had had a normal successful year in which no one had ever mentioned it at all.

This was the start of the theory, but after "The Origin of the Species" appeared things became very different. Both authors the whole subject became an acute subject of controversy with attacks on the theory for the most part from Germany and from the churches, while most scientists soon grew into accepting it.

**Disputed Knowledge**

As time went on, with the increased number of people now considering the subject, new points or difficulties began to emerge. Nobody really doubted the fact of inheritance, but nobody knew what the laws were, and all suggestions about them seemed to be inadequate. But about the start of this century the matter was revolutionized by what may be described as the discovery of a discovery.

Twenty years earlier Mendel had discovered a wonderfully simple law governing biological inheritance, but though he did publish it, his discovery was so long overlooked that when it had been rediscovered, it took a good many years to see it systematized but it explained the basic fact that was needed, the fact that each new variation of character would not, so to speak, be immediately smothered out by mixing it back with the characters of the unvarying members of the race.

It took many years to clear up even the outline of these matters, and still longer, with the help of mathematics, to be sure they were adequate to explain the detailed characteristics of the evolution of life. But now nobody seriously doubts the validity of the whole theory, and the adequacy of Mendel's law to explain at any rate nearly everything about inheritance.

**Overpopulation**

It is natural to ask then what are the prospects for the future? Nobody can ever give a clear answer to this sort of question. From the nature of things it concerns matters we do not yet know, in the meantime there is plenty of important work going on, and it is likely to go on for a long time. Among other matters it concerns such things as inheritance among elementary forms of life, like bacteria, and also difficult questions connected with the qualities of the complicated chemical substances in animals and plants, and the inheritance of these substances.

Finally there is the question of how the theory directly affects the human race now. Some countries have attained such a high degree of prosperity that to all intents they have managed to get rid of the struggle for life. The less efficient among their populations are no longer prevented from multiplying in numbers by processes like those that would be acting in wild nature.

Natural selection has been eliminated for the time being.

**Unsolvable Problem**

Man has immediately responded to the easing of his conditions by increasing in numbers, and those increases hold a most formidable threat for the not very distant future.

These quite conservative estimates say there will be twice as many people in the world in a few years as there are now, and nobody has any idea what is to stop the increases from going on even after that.

Can our statesmen realize that this is of far the most important political problem of the near future? Nobody knows any satisfactory answer, but if one is not drinking

**Italians Thanked For Saving Boy**

Verona, Italy—(UPI)—Four Italians who went to the aid of an American boy who fell into the Adige river here received the personal thanks of Maj. Gen. Harvey Fischer, SECAF commanding general.

Eight-year-old Michael Ford, son of Capt. John Ford of Baltimore, Md., attached to SETAF's provost marshal section at Caserma Passalacqua, slipped and fell into the swollen waters of the Adige as he walked along the bank.

Giuliana Molteni, 17-year-old student, was the first to see the boy's plight. She immediately leaped into the fast-flowing river and prevented him from being swept away. Three men, Sandro Meritano, Giuseppe Tebaldo and Lorenzo Fazzini, who also observed the danger, entered the water and the rescue was completed.

Fischer expressed his profound admiration, and that of all Americans under his command in Italy, for the courage of the Veronese who risked their lives.

**THE TEST**

Boston—(UPI)—Jean Mayer, associate professor of nutrition at the Harvard School of Public Health, scoffs at scientific tests made to determine if a person is obese. "The simplest way to learn that," says he, "is to stand in front of a mirror. If you look fat, you are fat."

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