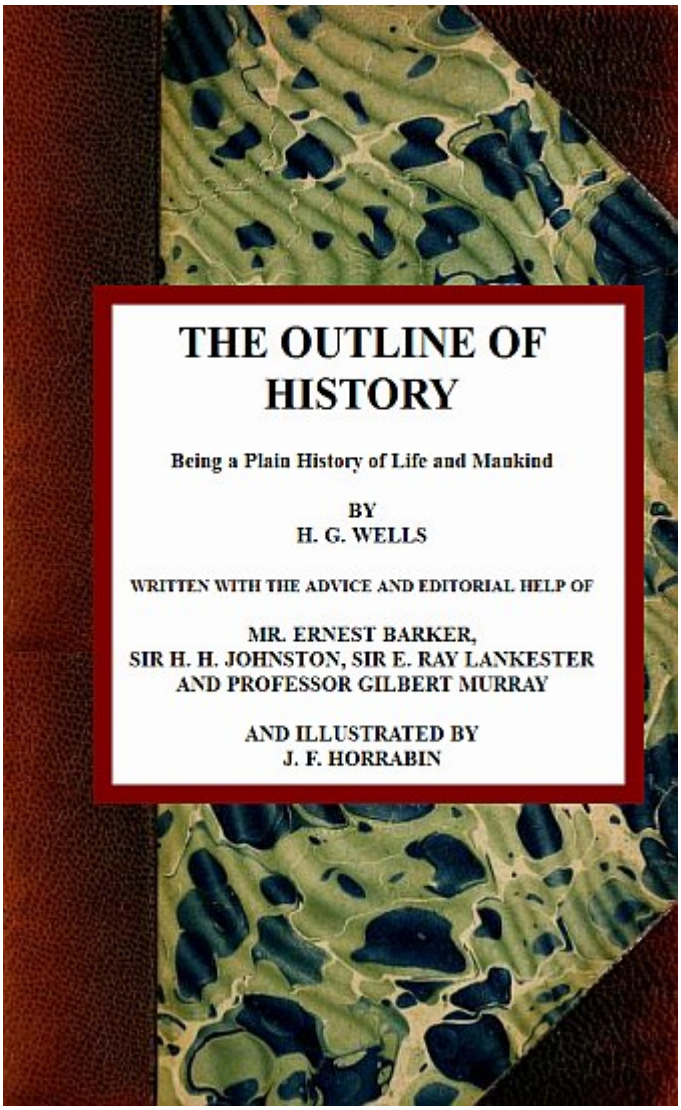

THE OUTLINE OF HISTORY

Every attempt has been made to replicate the original as printed.
No attempt has been made to correct or normalize the spelling of non-English words.
Some typographical errors have been corrected; a list follows the text.
The illustrations have been moved from mid-paragraph for ease of reading.

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THE OUTLINE OF HISTORY

Being a Plain History of Life and Mankind

BY
H. G. WELLS

WRITTEN WITH THE ADVICE AND EDITORIAL HELP OF

MR. ERNEST BARKER,
SIR H. H. JOHNSTON, SIR E. RAY LANKESTER
AND PROFESSOR GILBERT MURRAY

AND ILLUSTRATED BY
J. F. HORRABIN

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INTRODUCTION

> "*A philosophy of the history of the human race, worthy of its name, must begin with the heavens and descend to the earth, must be charged with the conviction that all existence is one—a single conception sustained from beginning to end upon one identical law.*"—FRIEDRICH RATZEL.

THIS *Outline of History* is an attempt to tell, truly and clearly, in one continuous narrative, the whole story of life and mankind so far as it is known to-day. It is written plainly for the general reader, but its aim goes beyond its use as merely interesting reading matter. There is a feeling abroad that the teaching of history considered as a part of general education is in an unsatisfactory condition, and particularly that the ordinary treatment of this "subject" by the class and teacher and examiner is too partial and narrow. But the desire to extend the general range of historical ideas is confronted by the argument that the available time for instruction is already consumed by that partial and narrow treatment, and that therefore, however desirable this extension of range may be, it is in practice impossible. If an Englishman, for example, has found the history of England quite enough for his powers of assimilation, then it seems hopeless to expect his sons and daughters to master universal history, if that is to consist of the history of England, plus the history of France, plus the history of Germany, plus the history of Russia, and so on. To which the only possible answer is that universal history is at once something more and something less than the aggregate of the national histories to which we are accustomed, that it must be approached in a different spirit and dealt with in a different manner. This book seeks to justify that answer. It has been written primarily to show that *history as one whole* is amenable to a more broad and comprehensive handling than is the history of special nations and periods, a broader handling that will bring it within the normal limitations of time and energy set to the reading and education of an ordinary citizen. This outline deals with ages and races and nations, where the ordinary history deals with reigns and pedigrees and campaigns; but it will not be found to be more crowded with names and dates, nor more difficult to follow and understand. History is no exception amongst the sciences; as the gaps fill in, the outline simplifies; as the outlook broadens, the clustering multitude of details dissolves into general laws. And many topics of quite primary interest to mankind, the first appearance and the growth of scientific knowledge for example, and its effects upon human life, the elaboration of the ideas of money and credit, or the story of the origins and spread and influence of Christianity, which must be treated fragmentarily or by elaborate digressions in any partial history, arise and flow completely and naturally in one general record of the world in which we live.

The need for a common knowledge of the general facts of human history throughout the world has become very evident during the tragic happenings of the last few years. Swifter means of communication have brought all men closer to one another for good or for evil. War becomes a universal disaster, blind and monstrously destructive; it bombs the baby in its cradle and sinks the food-ships that cater for the non-combatant and the neutral. There can be no peace now, we realize, but a common peace in all the world; no prosperity but a general prosperity. But *there can be no common peace and prosperity without common historical ideas*. Without such ideas to hold them together in harmonious co-operation, with nothing but narrow, selfish, and conflicting nationalist traditions, races and peoples are bound to drift towards conflict and destruction. This truth, which was apparent to that great philosopher Kant a century or more ago—it is the gist of his tract upon universal peace—is now plain to the man in the street. Our internal policies and our economic and social ideas are profoundly vitiated at present by wrong and fantastic ideas of the origin and historical relationship of social classes. A sense of history as the common adventure of all mankind is as necessary for peace within as it is for peace between the nations.

Such are the views of history that this *Outline* seeks to realize. It is an attempt to tell how our present state of affairs, this distressed and multifarious human life about us, arose in the course of vast ages and out of the inanimate clash of matter, and to estimate the quality and amount and range of the hopes with which it now faces its destiny. It is one experimental contribution to a great and urgently necessary educational reformation, which must ultimately restore universal history, revised, corrected, and brought up to date, to its proper place and use as the backbone of a general education. We say "restore," because all the great cultures of the world hitherto, Judaism and Christianity in the Bible, Islam in the Koran, have used some sort of cosmogony and world history as a basis. It may indeed be argued that without such a basis any really binding culture of men is inconceivable. Without it we are a chaos.

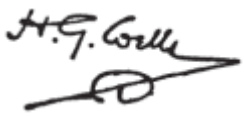
Remarkably few sketches of universal history by one single author have been written. One book that has influenced the writer very strongly is Winwood Reade's *Martyrdom of Man*. This *dates*, as people say,

nowadays, and it has a fine gloom of its own, but it is still an extraordinarily inspiring presentation of human history as one consistent process. Mr. F. S. Marvin's *Living Past* is also an admirable summary of human progress. There is a good *General History of the World* in one volume by Mr. Oscar Browning. America has recently produced two well-illustrated and up-to-date class books, Breasted's *Ancient Times* and Robinson's *Medieval and Modern Times*, which together give a very good idea of the story of mankind since the beginning of human societies. There are, moreover, quite a number of nominally Universal Histories in existence, but they are really not histories at all, they are encyclopædias of history; they lack the unity of presentation attainable only when the whole subject has been passed through one single mind. These universal histories are compilations, assemblies of separate national or regional histories by different hands, the parts being necessarily unequal in merit and authority and disproportionate one to another. Several such universal histories in thirty or forty volumes or so, adorned with allegorical title pages and illustrated by folding maps and plans of Noah's Ark, Solomon's Temple, and the Tower of Babel, were produced for the libraries of gentlemen in the eighteenth century. Helmolt's *World History*, in eight massive volumes, is a modern compilation of the same sort, very useful for reference and richly illustrated, but far better in its parts than as a whole. Another such collection is the *Historians' History of the World* in 25 volumes. *The Encyclopædia Britannica* contains, of course, a complete encyclopædia of history within itself, and is the most modern of all such collections.[1] F. Ratzel's *History of Mankind*, in spite of the promise of its title, is mainly a natural history of man, though it is rich with suggestions upon the nature and development of civilization. That publication and Miss Ellen Churchill Semple's *Influence of Geographical Environment*, based on Ratzel's work, are quoted in this *Outline*, and have had considerable influence upon its plan. F. Ratzel would indeed have been the ideal author for such a book as our present one. Unfortunately neither he nor any other ideal author was available.[2]

The writer will offer no apology for making this experiment. His disqualifications are manifest. But such work needs to be done by as many people as possible, he was free to make his contribution, and he was greatly attracted by the task. He has read sedulously and made the utmost use of all the help he could obtain. There is not a chapter that has not been examined by some more competent person than himself and very carefully revised. He has particularly to thank his friends Sir E. Ray Lankester, Sir H. H. Johnston, Professor Gilbert Murray, and Mr. Ernest Barker for much counsel and direction and editorial help. Mr. Philip Guedalla has toiled most efficiently and kindly through all the proofs. Mr. A. Allison, Professor T. W. Arnold, Mr. Arnold Bennett, the Rev. A. H. Trevor Benson, Mr. Aodh de Blacam, Mr. Laurence Binyon, the Rev. G. W. Broomfield, Sir William Bull, Mr. L. Cranmer Byng, Mr. A. J. D. Campbell, Mr. A. Y. Campbell, Mr. L. Y. Chen, Mr. A. R. Cowan, Mr. O. G. S. Crawford, Dr. W. S. Culbertson, Mr. R. Langton Cole, Mr. B. G. Collins, Mr. J. J. L. Duyvendak, Mr. O. W. Ellis, Mr. G. S. Ferrier, Mr. David Freeman, Mr. S. N. Fu, Mr. G. B. Gloyne, Sir Richard Gregory, Mr. F. H. Hayward, Mr. Sydney Herbert, Dr. Fr. Krupicka, Mr. H. Lang Jones, Mr. C. H. B. Laughton, Mr. B. I. Macalpin, Mr. G. H. Mair, Mr. F. S. Marvin, Mr. J. S. Mayhew, Mr. B. Stafford Morse, Professor J. L. Myres, the Hon. W. Ormsby-Gore, Sir Sydney Olivier, Mr. R. I. Pocock, Mr. J. Pringle, Mr. W. H. R. Rivers, Sir Denison Ross, Dr. E. J. Russell, Dr. Charles Singer, Mr. A. St. George Sanford, Dr. C. O. Stallybrass, Mr. G. H. Walsh, Mr. G. P. Wells, Miss Rebecca West, and Mr. George Whale have all to be thanked for help, either by reading parts of the MS. or by pointing out errors in the published parts, making suggestions, answering questions, or giving advice. The amount of friendly and sympathetic assistance the writer has received, often from very busy people, has been a quite extraordinary experience. He has met with scarcely a single instance of irritation or impatience on the part of specialists whose domains he has invaded and traversed in what must have seemed to many of them an exasperatingly impudent and superficial way. Numerous other helpful correspondents have pointed out printer's errors and minor slips in the serial publication which preceded this book edition, and they have added many useful items of information, and to those writers also the warmest thanks are due. But of course none of these generous helpers are to be held responsible for the judgments, tone, arrangement, or writing of this *Outline*. In the relative importance of the parts, in the moral and political implications of the story, the final decision has necessarily fallen to the writer. The problem of illustrations was a very difficult one for him, for he had had no previous experience in the production of an illustrated book. In Mr. J. F. Horrabin he has had the good fortune to find not only an illustrator but a collaborator. Mr. Horrabin has spared no pains to make this work informative and exact. His maps and drawings are a part of the text, the most vital and decorative part. Some of them, the hypothetical maps, for example, of the western world at the end of the last glacial age, during the "pluvial age" and 12,000 years ago, and the migration map of the Barbarian invaders of the Roman Empire, represent the reading and inquiry of many laborious days.

The index to this edition is the work of Mr. Strickland Gibson of Oxford. Several correspondents have asked for a pronouncing index and accordingly this has been provided.

The writer owes a word of thanks to that living index of printed books, Mr. J. F. Cox of the London Library. He would also like to acknowledge here the help he has received from Mrs. Wells. Without her labour in typing and re-typing the drafts of the various chapters as they have been revised and amended, in checking references, finding suitable quotations, hunting up illustrations, and keeping in order the whole mass of material for this history, and without her constant help and watchful criticism, its completion would have been impossible.



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BOOK I

THE MAKING OF OUR WORLD

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THE OUTLINE OF HISTORY

I

THE EARTH IN SPACE AND TIME

THE earth on which we live is a spinning globe. Vast though it seems to us, it is a mere speck of matter in the greater vastness of space.

Space is, for the most part, emptiness. At great intervals there are in this emptiness flaring centres of heat and light, the "fixed stars." They are all moving about in space, notwithstanding that they are called fixed stars, but for a long time men did not realize their motion. They are so vast and at such tremendous distances that their motion is not perceived. Only in the course of many thousands of years is it appreciable. These fixed stars are so far off that, for all their immensity, they seem to be, even when we look at them through the most powerful telescopes, mere points of light, brighter or less bright. A few, however, when we turn a telescope upon them, are seen to be whirls and clouds of shining vapour which we call nebulæ. They are so far off that a movement of millions of miles would be imperceptible.

One star, however, is so near to us that it is like a great ball of flame. This one is the sun. The sun is itself in its nature like a fixed star, but it differs from the other fixed stars in appearance because it is beyond comparison nearer than they are; and because it is nearer men have been able to learn something of its nature. Its mean distance from the earth is ninety-three million miles. It is a mass of flaming matter, having a diameter of 866,000 miles. Its bulk is a million and a quarter times the bulk of our earth. {v1-4}

These are difficult figures for the imagination. If a bullet fired from a Maxim gun at the sun kept its muzzle velocity unimpaired, it would take seven years to reach the sun. And yet we say the sun is near, measured by the scale of the stars. If the earth were a small ball, one inch in diameter, the sun would be a globe of nine feet diameter; it would fill a small bedroom. It is spinning round on its axis, but since it is an incandescent fluid, its polar regions do not travel with the same velocity as its equator, the surface of which rotates in about twenty-five days. The surface visible to us consists of clouds of incandescent metallic vapour. At what lies below we can only guess. So hot is the sun's atmosphere that iron, nickel, copper, and tin are present in it in a gaseous state. About it at great distances circle not only our earth, but certain kindred bodies called the planets. These shine in the sky because they reflect the light of the sun; they are near enough for us to note their movements quite easily. Night by night their positions change with regard to the fixed stars.

It is well to understand how empty space is. If, as we have said, the sun were a ball nine feet across, our earth would, in proportion, be the size of a one-inch ball, and at a distance of 323 yards from the sun. The moon would be a speck the size of a small pea, thirty inches from the earth. Nearer to the sun than the earth would be two other very similar specks, the planets Mercury and Venus, at a distance of 125 and 250 yards respectively. Beyond the earth would come the planets Mars, Jupiter, Saturn, Uranus, and Neptune, at distances of 500, 1806, 3000, 6000, and 9500 yards respectively. There would also be a certain number of very much smaller specks, flying about amongst these planets, more particularly a number called the asteroids circling between Mars and Jupiter, and occasionally a little puff of more or less luminous vapour and dust would drift into the system from the almost limitless emptiness beyond. Such a puff is what we call a comet. *All the rest of the space about us and around us and for unfathomable distances beyond is cold, lifeless, and void.* The nearest fixed star to us, *on this minute scale*, be it remembered,—the earth as a one-inch ball, and the moon a little pea—would be over 40,000 miles away.

The science that tells of these things and how men have come to know about them is Astronomy, and to books of astronomy the reader must go to learn more about the sun and stars. The science and description of the world on which we live are called respectively Geology and Geography. {v1-5}

The diameter of our world is a little under 8000 miles. Its surface is rough; the more projecting parts of the roughness are mountains, and in the hollows of its surface there is a film of water, the oceans and seas. This film of water is about five miles thick at its deepest part—that is to say, the deepest oceans have a depth of five miles. This is very little in comparison with the bulk of the world.

About this sphere is a thin covering of air, the atmosphere. As we ascend in a balloon or go up a mountain from the level of the sea-shore the air is continually less dense, until at last it becomes so thin that it cannot support life. At a height of twenty miles there is scarcely any air at all—not one hundredth part of the density of air at the surface of the sea. The highest point to which a bird can fly is about four miles up—the condor, it is said, can struggle up to that; but most small birds and insects which are carried up by aeroplanes or balloons drop off insensible at a much lower level, and the greatest height to which any mountaineer has ever climbed is under five miles. Men have flown in aeroplanes to a height of over four miles, and balloons with men in them have reached very nearly seven miles, but at the cost of

considerable physical suffering. Small experimental balloons, containing not men, but recording instruments, have gone as high as twenty-two miles.

It is in the upper few hundred feet of the crust of the earth, in the sea, and in the lower levels of the air below four miles that life is found. We do not know of any life at all except in these films of air and water upon our planet. So far as we know, all the rest of space is as yet without life. Scientific men have discussed the possibility of life, or of some process of a similar kind, occurring upon such kindred bodies as the planets Venus and Mars. But they point merely to questionable possibilities.

Astronomers and geologists and those who study physics have been able to tell us something of the origin and history of the earth. They consider that, vast ages ago, the sun was a spinning, flaring mass of {v1-6} matter, not yet concentrated into a compact centre of heat and light, considerably larger than it is now, and spinning very much faster, and that as it whirled, a series of fragments detached themselves from it, which became the planets. Our earth is one of these planets. The flaring mass that was the material of the earth broke as it spun into two masses, a larger, the earth itself, and a smaller, which is now the dead, still moon. Astronomers give us convincing reasons for supposing that sun and earth and moon and all that system were then whirling about at a speed much greater than the speed at which they are moving to-day, and that at first our earth was a flaming thing upon which no life could live. The way in which they have reached these conclusions is by a very beautiful and interesting series of observations and reasoning, too long and elaborate for us to deal with here. But they oblige us to believe that the sun, incandescent though it is, is now much cooler than it was, and that it spins more slowly now than it did, and that it continues to cool and slow down. And they also show that the rate at which the earth spins is diminishing and continues to diminish—that is to say, that our day is growing longer and longer, and that the heat at the centre of the earth wastes slowly. There was a time when the day was not a half and not a third of what it is to-day; when a blazing hot sun, much greater than it is now, must have moved visibly—had there been an eye to mark it—from its rise to its setting across the skies. There will be a time when the day will be as long as a year is now, and the cooling sun, shorn of its beams, will hang motionless in the heavens.

It must have been in days of a much hotter sun, a far swifter day and night, high tides, great heat, tremendous storms and earthquakes, that life, of which we are a part, began upon the world. The moon also was nearer and brighter in those days and had a changing face.[3]

{v1-7}

II

THE RECORD OF THE ROCKS

§ 1. *The First Living Things.* § 2. *How Old Is the World?*

§ 1

WE do not know how life began upon the earth.[4]

Biologists, that is to say, students of life, have made guesses about these beginnings, but we will not discuss them here. Let us only note that they all agree that life began where the tides of those swift days spread and receded over the steaming beaches of mud and sand.

The atmosphere was much denser then, usually great cloud masses obscured the sun, frequent storms darkened the heavens. The land of those days, upheaved by violent volcanic forces, was a barren land, without vegetation, without soil. The almost incessant rain-storms swept down upon it, and rivers and torrents carried great loads of sediment out to sea, to become muds that hardened later into slates and shales, and sands that became sandstones. The geologists have studied the whole accumulation of these sediments as it remains to-day, from those of the earliest ages to the most recent. Of course the oldest deposits are the most distorted and changed and worn, and in them there is now no certain trace to be found of life at all. Probably the earliest forms of life were small and soft, leaving no evidence of their existence behind them. It was only when some of these living things developed skeletons and shells of lime and such-like hard material that they left fossil vestiges after they died, and so put themselves on record for examination. {v1-8}

The literature of geology is very largely an account of the fossils that are found in the rocks, and of the order in which layers after layers of rocks lie one on another. The very oldest rocks must have been formed before there was any sea at all, when the earth was too hot for a sea to exist, and when the water that is now sea was an atmosphere of steam mixed with the air. Its higher levels were dense with clouds, from which a hot rain fell towards the rocks below, to be converted again into steam long before it reached their incandescence. Below this steam atmosphere the molten world-stuff solidified as the first rocks. These first rocks must have solidified as a cake over glowing liquid material beneath, much as cooling lava does. They must have appeared first as crusts and clinkers. They must have been constantly remelted and recrystallized before any thickness of them became permanently solid. The name of Fundamental Gneiss is given to a great underlying system of crystalline rocks which probably formed age by age as this hot youth of the world drew to its close. The scenery of the world in the days when the Fundamental Gneiss was formed must have been more like the interior of a furnace than anything else to be found upon earth at the present time.

After long ages the steam in the atmosphere began also to condense and fall right down to earth, pouring at last over these warm primordial rocks in rivulets of hot water and gathering in depressions as pools and lakes and the first seas. Into those seas the streams that poured over the rocks brought with them dust and particles to form a sediment, and this sediment accumulated in layers, or as geologists call them, *strata*, and formed the first Sedimentary Rocks. Those earliest sedimentary rocks sank into depressions and were covered by others; they were bent, tilted up, and torn by great volcanic disturbances and by tidal strains that swept through the rocky crust of the earth. We find these first sedimentary rocks still coming to the surface of the land here and there, either not covered by later strata or exposed after vast ages of concealment by the wearing off of the rock that covered them later—there are great surfaces of them in Canada especially; they are cleft and bent, partially remelted, recrystallized, hardened and compressed, but recognizable for what they are. And they contain no single certain trace of life at all. They are frequently called *Azoic* (lifeless) Rocks. But since in some of these earliest sedimentary rocks a substance called graphite (black lead) occurs, and also red and black oxide of iron, and since it is asserted that these substances need the activity of living things for their production, which may or may not be the case, some geologists prefer to call these earliest sedimentary rocks *Archæozoic* (primordial life). They suppose that the first life was soft living matter that had no shells or skeletons or any such structure that could remain as a recognizable fossil after its death, and that its chemical influence caused the deposition of graphite and iron oxide. This is pure guessing, of course, and there is at least an equal probability that in the time of formation of the Azoic Rocks, life had not yet begun. {v1-9}

Long ago there were found in certain of these ancient first-formed rocks in Canada, curious striped masses, and thin layers of white and green mineral substance which Sir William Dawson considered were