

rhinus, the great hippopotamus, perhaps even in the miocene contemporary with the mastodon.

At the close of the Tertiary period, from causes not yet determined, the Northern Hemisphere underwent a great depression of temperature. From a torrid it passed to a glacial condition. After a period of prodigious length, the temperature again rose, and the glaciers that had so extensively covered the surface receded. Once more there was a decline in the heat, and the glaciers again advanced, but this time not so far as formerly. This ushered in the Quaternary period, during which very slowly the temperature came to its present degree. The water deposits that were being made required thousands of centuries for their completion. At the beginning of the Quaternary period there were alive the cave-bear, the cave-lion, the amphibious hippopotamus, the rhinoceros with chambered nostrils, the mammoth. In fact, the mammoth swarmed. He delighted in a boreal climate. By degrees the reindeer, the horse, the ox, the bison, multiplied, and disputed with him his food. Partly for this reason, and partly because of the increasing heat, he became extinct. From middle Europe, also, the reindeer retired. His departure marks the end of the Quaternary period.

Since the advent of man on the earth, we have, therefore, to deal with periods of incalculable length. Vast changes in the climate and fauna were produced by the slow operation of causes such as are in action at the present day. Figures cannot enable us to appreciate these enormous lapses of time.

It seems to be satisfactorily established, that a race allied to the Basques may be traced back to the Neolithic age. At that time the British Islands were undergoing a change of level, like that at present occur-

ring in the Scandinavian Peninsula. Scotland was rising, England was sinking. In the Pleistocene age there existed in Central Europe a rude race of hunters and fishers closely allied to the Esquimaux.

In the old glacial drift of Scotland the relics of man are found along with those of the fossil elephant. This carries us back to that time above referred to, when a large portion of Europe was covered with ice, which had edged down from the polar regions to southerly latitudes, and, as glaciers, descended from the summits of the mountain-chains into the plains. Countless species of animals perished in this cataclysm of ice and snow, but man survived.

In his primitive savage condition, living for the most part on fruits, roots, shell-fish, man was in possession of a fact which was certain eventually to insure his civilization. He knew how to make a fire. In peat-beds, under the remains of trees that in those localities have long ago become extinct, his relics are still found, the implements that accompany him indicating a distinct chronological order. Near the surface are those of bronze, lower down those of bone or horn, still lower those of polished stone, and beneath all those of chipped or rough stone. The date of the origin of some of these beds cannot be estimated at less than forty or fifty thousand years.

The caves that have been examined in France and elsewhere have furnished for the Stone age axes, knives, lance and arrow points, scrapers, hammers. The change from what may be termed the chipped to the polished stone period is very gradual. It coincides with the domestication of the dog, an epoch in hunting-life. It embraces thousands of centuries. The appearance of arrow-heads indicates the invention of the bow, and the

rise of man from a defensive to an offensive mode of life. The introduction of barbed arrows shows how inventive talent was displaying itself; bone and horn tips, that the huntsman was including smaller animals, and perhaps birds, in his chase; bone whistles, his companionship with other huntsmen or with his dog. The scraping-knives of flint indicate the use of skin for clothing, and rude bodkins and needles its manufacture. Shells perforated for bracelets and necklaces prove how soon a taste for personal adornment was acquired; the implements necessary for the preparation of pigments suggest the painting of the body, and perhaps tattooing; and bâtons of rank bear witness to the beginning of a social organization.

With the utmost interest we look upon the first germs of art among these primitive men. They have left us rude sketches on pieces of ivory and flakes of bone, and carvings, of the animals contemporary with them. In these prehistoric delineations, sometimes not without spirit, we have mammoths, combats of reindeer. One presents us with a man harpooning a fish, another a hunting-scene of naked men armed with the dart. Man is the only animal who has the propensity of depicting external forms, and of availing himself of the use of fire.

Shell-mounds, consisting of bones and shells, some of which may be justly described as of vast extent, and of a date anterior to the Bronze age, and full of stone implements, bear in all their parts indications of the use of fire. These are often adjacent to the existing coasts; sometimes, however, they are far inland, in certain instances as far as fifty miles. Their contents and position indicate for them a date posterior to that of the great extinct mammals, but prior to the domesticated

Some of these, it is said, cannot be less than one hundred thousand years old.

The lake-dwellings in Switzerland—huts built on piles or logs, wattled with boughs—were, as may be inferred from the accompanying implements, begun in the Stone age, and continued into that of Bronze. In the latter period the evidences become numerous of the adoption of an agricultural life.

It must not be supposed that the periods into which geologists have found it convenient to divide the progress of man in civilization are abrupt epochs, which hold good simultaneously for the whole human race. Thus the wandering Indians of America are only at the present moment emerging from the Stone age. They are still to be seen in many places armed with arrows, tipped with flakes of flint. It is but as yesterday that some have obtained, from the white man, iron, fire-arms, and the horse.

So far as investigations have gone, they indisputably refer the existence of man to a date remote from us by many hundreds of thousands of years. It must be borne in mind that these investigations are quite recent, and confined to a very limited geographical space. No researches have yet been made in those regions which might reasonably be regarded as the primitive habitat of man.

We are thus carried back immeasurably beyond the six thousand years of Patristic chronology. It is difficult to assign a shorter date for the last glaciation of Europe than a quarter of a million of years, and human existence antedates that. But not only is it this grand fact that confronts us, we have to admit also a primitive animalized state, and a slow, a gradual development.

But this forlorn, this savage condition of humanity

is in strong contrast to the paradisiacal happiness of the garden of Eden, and, what is far more serious, it is inconsistent with the theory of the Fall.

I have been induced to place the subject of this chapter out of its proper chronological order, for the sake of presenting what I had to say respecting the nature of the world more completely by itself. The discussions that arose as to the age of the earth were long after the conflict as to the criterion of truth—that is, after the Reformation; indeed, they were substantially included in the present century. They have been conducted with so much moderation as to justify the term I have used in the title of this chapter, "Controversy," rather than "Conflict." Geology has not had to encounter the vindictive opposition with which astronomy was assailed, and, though, on her part, she has insisted on a concession of great antiquity for the earth, she has herself pointed out the unreliability of all numerical estimates thus far offered. The attentive reader of this chapter cannot have failed to observe inconsistencies in the numbers quoted. Though wanting the merit of exactness, those numbers, however, justify the claim of vast antiquity, and draw us to the conclusion that the time-scale of the world answers to the space-scale in magnitude.

## CHAPTER VIII

### CONFLICT RESPECTING THE CRITERION OF TRUTH.

- Ancient philosophy declares that man has no means of ascertaining the truth.*
- Differences of belief arise among the early Christians.—An ineffectual attempt is made to remedy them by Councils.—Miracle and ordeal proof introduced.*
- The papacy resorts to auricular confession and the Inquisition.—It perpetrates frightful atrocities for the suppression of differences of opinion.*
- Effect of the discovery of the Pandects of Justinian and development of the canon law on the nature of evidence.—It becomes more scientific.*
- The Reformation establishes the rights of individual reason.—Catholicism asserts that the criterion of truth is in the Church. It restrains the reading of books by the Index Expurgatorius, and combats dissent by such means as the massacre of St. Bartholomew's Eve.*
- Examination of the authenticity of the Pentateuch as the Protestant criterion.—Spurious character of those books.*
- For Science the criterion of truth is to be found in the revelations of Nature: for the Protestant, it is in the Scriptures; for the Catholic, in an infallible Pope.*

"WHAT is truth?" was the passionate demand of a Roman procurator on one of the most momentous occasions in history. And the Divine Person who stood before him, to whom the interrogation was addressed, made no reply—unless, indeed, silence contained the reply.

Often and vainly had that demand been made before

—often and vainly has it been made since. No one has yet given a satisfactory answer.

When, at the dawn of science in Greece, the ancient religion was disappearing like a mist at sunrise, the pious and thoughtful men of that country were thrown into a condition of intellectual despair. Anaxagoras plaintively exclaims, "Nothing can be known, nothing can be learned, nothing can be certain, sense is limited, intellect is weak, life is short." Xenophanes tells us that it is impossible for us to be certain even when we utter the truth. Parmenides declares that the very constitution of man prevents him from ascertaining absolute truth. Empedocles affirms that all philosophical and religious systems must be unreliable, because we have no criterion by which to test them. Democritus asserts that even things that are true cannot impart certainty to us; that the final result of human inquiry is the discovery that man is incapable of absolute knowledge; that, even if the truth be in his possession, he cannot be certain of it. Pyrrho bids us reflect on the necessity of suspending our judgment of things, since we have no criterion of truth; so deep a distrust did he impart to his followers, that they were in the habit of saying, "We assert nothing; no, not even that we assert nothing." Epicurus taught his disciples that truth can never be determined by reason. Arcesilaus, denying both intellectual and sensuous knowledge, publicly avowed that he knew nothing, not even his own ignorance! The general conclusion to which Greek philosophy came was this—that, in view of the contradiction of the evidence of the senses, we cannot distinguish the true from the false; and such is the imperfection of reason, that we cannot affirm the correctness of any philosophical deduction.

It might be supposed that a revelation from God to man would come with such force and clearness as to settle all uncertainties and overwhelm all opposition. A Greek philosopher, less despairing than others, had ventured to affirm that the coexistence of two forms of faith, both claiming to be revealed by the omnipotent God, proves that neither of them is true. But let us remember that it is difficult for men to come to the same conclusion as regards even material and visible things, unless they stand at the same point of view. If discord and distrust were the condition of philosophy three hundred years before the birth of Christ, discord and distrust were the condition of religion three hundred years after his death. This is what Hilary, the Bishop of Poitiers, in his well-known passage written about the time of the Nicene Council, says:

"It is a thing equally deplorable and dangerous that there are as many creeds as opinions among men, as many doctrines as inclinations, and as many sources of blasphemy as there are faults among us, because we make creeds arbitrarily and explain them as arbitrarily. Every year, nay, every moon, we make new creeds to describe invisible mysteries; we repent of what we have done; we defend those who repent; we anathematize those whom we defend; we condemn either the doctrines of others in ourselves, or our own in that of others; and, reciprocally tearing each other to pieces, we have been the cause of each other's ruin."

These are not mere words; but the import of this self-accusation can be realized fully only by such as are familiar with the ecclesiastical history of those times. As soon as the first fervor of Christianity as a system of benevolence had declined, dissensions appeared. Ecclesiastical historians assert that "as early as the sec