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Cottage Grove, Oregon, Friday, June 15, 1900.
NO. 22

## MINES MINING.

The Second of a Series of Articles on the Geological Construction and the Formation of Mineral Zones.
[contributed.]
As the primitive stages of mankind upon the earth and the early progress of every race fade into obscurities of mythology and archeology, so the story of the primeval condition of our globe is lost in the dim light of remote ages, regarding which, almost all that is known or can be surmised is furnished by the calculations and speculations of the astronomers. If the earth's history could only be traced out, from evidence supplied by the planet itself, it could be followed no farther back than the oldest portions of the earth now accessible to us, yet there can be no doubt that the earth must bave had a long history before the appearance of any of the solid portions now to be seen. Of the first hard crust that formed upon the surface of the earth no trace has yet been
found. Indeed there is reason to suppose that this original crust would found. Indeed there is reason to suppose that this original crust would
break up and sink into the molten mass beneath, and not until after break up and sink into the molten mass beneath, and not until after
many such formations and submergencies did a crust establish itself of sufficient strength to form a permanent solid surface. Even though solid the surface may still bave been at a glowing red-heat like so much molten iron. Over this burning nucleus lay the original atmosphere, consisting not merely of the gases in the present atmosphere, but of the hot vapors which subsequently condense into the ocean or were absorbed into the crust. It was a hot vaporous envelope under the pressure of
which the first layers of hot water that condensed from it may have had the temperature of molten lead. Regarding the early ages of the earth's history we can only surmise, for no direct record has been preserved; they are sometimes spoken of as pre-geological, but geology really embraces the whole history of the planet, no matter from what sources the evidence may be obtained. When we come to the solid frame work of the earth we staud on firmer footing in the investigation of geological history. Had the successive layers of rock that constitute the geological record remained in their original position, only the uppermost and therefore most recent of them, would have been visible, and nothing more
could have heen learned regarding the underlaying lasers could have heen learned regarding the underlaying layers except in so far as it might have been possible to explore theni by boring into them, but the deepest mines do not reach a greater depth than 4000 feet from the surface. Owing, however, to the way in which the crust of theearth has been plicated and fractured, portious of the bottom layers have been pushed up to the sufface, an 1 thoss that lay above them have been thrown into vertical or inclined positions, so that we can walk over the upturned edges and examine them bed by bed. Instead of being re-
stricted to merely the uppermost few huadred feet of the crust we are stricted to merely the uppermost few hundred feet of the crust we are enabled to examine many thousand feet of its rocks. The total mean thickness of the accessible fossiliferous rocks of North America has been estimated at 75,000 feet or upward of 14 miles. This vast depth of rock has been laid bare to observation by successive disturbances of the crust. The main division of the geological record, and we may also say of geological time, is 5 . (t) Archæn-embracing the periods of the earliest rocks wherein no trace of organic life occur. (2) Paleozoic or Primary-including the long succession of ages during which the earliest types of life existed. (3) Mesozoic or Secondary-comprising a series of periods when more advanced types of life flourished. (4) Cainozoic or Tertiary-embracing the ages when the existing types of life appeared, but excluding man and Quaternary or Post Tertiary, and Recent-including the time siuce man appeared upon the earth. It must not be supposed that each of these five divisions were of the same duration, as the Paleozoic ages were probably vastly more prolonged than those of any later division, while the Quaternary periods must comprise a very much briefer period than any of the other four groups.
A MONSTER DEVIL, FISH. ${ }^{\text {A }}$ VICrorious, -
Destroying its victim, is a type
of Constupation. The power of this
malady is felt on organs, nerves, city played the Creswll of this muscles and brain. But Dr. King's match game of ball at the Goshen New Life Pills are a safe and cer- picnic last Saturday. The game tain cure. Best in the world for
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Liver, Kidneys and five inmings and the score
stood ten to two in favor of the BoBowels. Only 25 cents at Benson
Drug Co.

## CARD OF THANKS

We wish to express our heartfelt thanks to all who so kindly assisted us during the illness and
death oi our little daughter Ethel May we live, that we may meet her in the land where parting is no more. Mr. and Mrs. C. Lewis. $\left\lvert\, \begin{aligned} & \text { gua } \\ & \text { Co }\end{aligned}\right.$

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