ly rigid peridotite, as being fluid enough to "boil" with a rising motion, just like the convection currents that rise in a kettle of soup that is getting good and hot.

This sounds like a paradox, but there are plenty of familiar examples to show how it might be. Any number of familiar substances are solid enough to drive nails with, yet fluid enough to flow very slowly. One needs only to name asphalt, rosin, and the proverbial "molasses in January." This convectional "boiling" of the glassy, rigid yet fluid rock in the earth's interior can be a great deal slower than that same molasses: it has thousands, even millions, of Januaries in which to do its flowing.

In the soup kettle, the boiling or convectional currents flow upward in the middle, the area of greatest heat, then outward along the top and down the sides to the bottom again as the liquid cools a little and is replaced by fresh supplies of hotter stuff. The bottom of Prof. Holmes' kettle is the middle of the earth. The currents he visions flow toward the surface, discharge their burden of heat, then as they cool sink toward the center again. It may take many thousands of years for the kettle to bubble once; but time is one thing about which geological history is not the least stingy. The Psalmist might have been writing geology instead of religion when he spoke of a thousand years being but as a day, and as a watch in the night when it is past.

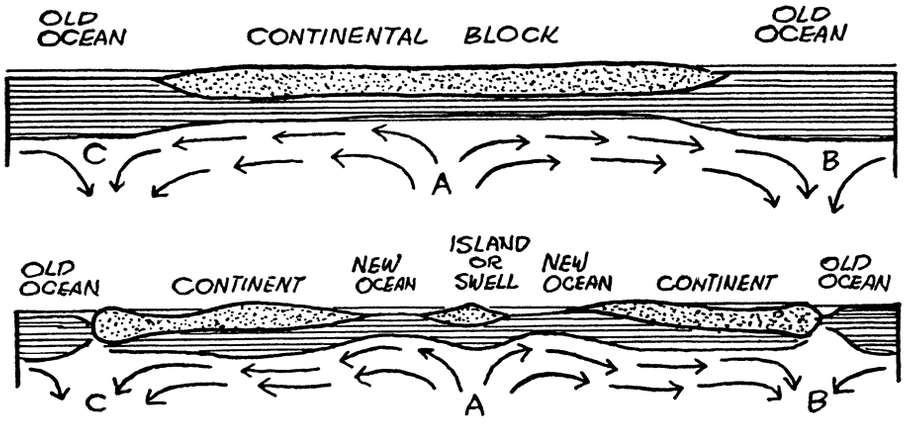
With currents thus flowing up, and along just under the surface, and then down again, they must naturally establish a regular set of circuits, just as the boiling soup in the kettle does. Prof. Holmes thinks in terms of a main circulation flowing from the earth's core toward the surface near the equator, then along the surface (or rather, just under the 35-mile crust) to the polar regions, then down toward the core again.

Scum on the Kettle

That 35-mile-thick crust of basaltic rock, that forms the bottoms of all the oceans and apparently also underlies the lighter, thinner rock masses of the continents, coats the kettle like a tough film. On top of it the granites lie, like lighter masses of scum. When the boiling from underneath heaves the basaltic film, the granitic scum-masses slide about, wrinkling their edges in the direction toward which they are sliding. Thus are mountain folds thrown up on the edge of continents, Prof. Holmes thinks; for he is one of those geologists who believe in the theory of shifting and migrating continents, most notably advocated by the great German scientist, von Wegener.

The movements in the crust due to the "boiling" underneath not only shift the continental masses about; they tear them apart, Prof. Holmes believes. A current from underneath may make two continents where only one was before, and at the same time leave an island chain or a subterranean ridge midway between them. Such an arrangement can be found, for example, in the Atlantic region, with divorced Europe and America on opposite sides of the ocean, and a ridge bearing most of the long series of mid-Atlantic islands, from Iceland to St. Helena, running along the bottom of the ocean between them.

But the main equator-to-pole circulation is not all. There are eddies and counter-currents, both near the surface and below it, that can be called on to account for many of the details of mountain-building and other geological features. One of Prof. Holmes' colleagues performed a very interesting experiment that anybody can repeat. He laid a couple of strips of canvas along the top of a table, with their ends dropping down through a crack in the middle. These represented currents of the deep rock "soup," meeting and sinking toward the earth's core. On top of these he laid several layers of thick woollen cloth, to represent strata of the earth's crust. Then he pulled the ends of his canvas strips: the current in the "soup" was flowing downward. The superimposed cloth layers folded into beautiful "mountains," closely similar to actual geological foldings known in the Swiss Alps!



SPLITTING A CONTINENT

Two diagrams showing how a rising current under a land mass might split it into two continents that drift apart, leaving an island ridge between them and thickening into mountain ranges on their outer edges.

Science News Letter, September 10, 1932

GENETICS

Few People Have Pure Blue Eyes

BLUE EYES, even the Delft blue eyes of Holland, are seldom all blue. As a rule they contain at least a touch of yellow, and this color combination is a hereditary affair.

At the meeting in Ithaca of the Sixth International Congress of Genetics, Dr. G. P. Frets, of the Maasoord Mental Hospital at Poortugaal, Holland, told of his search for really pure blue eyes and the extreme rarity he discovered to exist, even in a country running as strongly to blonds as does his native land. Almost all the supposedly blue eyes he examined had more or less yellow pigment in them, usually in the central rim of the iris.

The question arose in his mind whether even eyes that have no detectable yellow in them are not simply "the extreme minus variation" of originally yellow-overlaid eyes, just as a yellow tulip is basically a red-and-yellow one with almost all the red eliminated. But he did find some eyes that are "racially blue"—all blue, with no yellow traceable in their ancestry and none discoverable in their descendants. Such really blue eyes, however, are rarer than flawless emeralds.

Science News Letter, September 10, 1932