

of Adams on the Grenville Series of Canada, constitute a substantial step toward a more precise knowledge of the real nature and origin of the Archæan complex. The need of modern analyses of typical unaltered sediments for purposes of comparison with crystalline metamorphic rocks in these and similar investigations is rendered apparent.

#### SEQUENCE OF VOLCANIC ROCKS.

In a paper by Lawson and Palache on the Berkeley Hills, California (*Bull. of the Dept. of Geology*, Univ. of Calif., Vol. 2, pp. 349-450, 1902), the microscopical petrography of a series of andesitic, basaltic and rhyolitic lavas is described in detail. The most interesting petrological feature brought out in their description, however, is the remarkable fivefold repetition of the eruption of andesite, basalt and rhyolite, in the order named. As the authors cautiously point out, the small size of the area considered (less than six square miles) renders it possible that the perfection of this periodicity is accidental, but this commendable reserve does not deprive the fact of its importance and significance. The paper, as a whole, is a successful attempt to present to students a detail of the remarkably rich geological field which surrounds the University of California.

F. L. RANSOME.

#### THE ALASKA FUEL SUPPLY.

IN closing his discussion of the coal resources of Alaska, in Part III. of the Twenty-second Annual Report of the United States Geological Survey, now in press, Mr. Alfred H. Brooks adds some brief comments on the other sources of fuel. In addition to coal, he says, there are three possible sources of fuel supply in Alaska, namely, timber, petroleum, and peat; and of these, timber alone has been utilized. Southeastern Alaska is heavily forested and affords ample wood for fuel. Certain species of trees are found as far west as Kadiak Island. Beyond Kadiak, to the west and north, the coast-region of Alaska is practically treeless. Some willows, and occasionally spruce, are found in the sheltered regions; but for the most part the coastal belt is covered simply with moss, grass and low

shrubs. This type of vegetation extends northward to Point Barrow and thence eastward. The moss and grass-covered plains and the rolling plains are called *tundras*, and are found on the northern continental margins encircling the globe.

The interior of Alaska has usually a sufficient supply of wood for ordinary purposes of building and mining and for fuel. The larger river valleys are often heavily forested with spruce and other trees. On the Yukon, near the international boundary, the timber line is at about 3,000 feet; northward it decreases in elevation, and on the Koyukuk it is about 2,500 feet. Still further to the north and west it further decreases in altitude, and on the Upper Kobuk the timber is said to be limited to the floor of the largest river valleys. In the northern Arctic drainage reports state that there is no timber except the willows, which however grow to considerable size. The Kuskokwim, Sushitna and Copper rivers all have timber basins. During the great influx of population of the last three years, much timber has been destroyed by fire in the dry summer months. In the northwestern and northern parts of the territory, from Norton Bay around to the mouth of the McKenzie, the shore was once abundantly supplied with driftwood. The Eskimos, who have been using this wood for generations, are very economical in the matter of fuel, and, until the coming of the white man, the probabilities are that the driftwood was accumulated faster than it was used. This driftwood is brought down from the interior by the larger rivers, whose banks are wooded. The cutting of the wood along the banks of the Yukon has already decreased the annual contribution of driftwood to northern Bering Sea. This, together with the rapid exhaustion by the white man of the supply which had accumulated in the past, will soon cause the Eskimo as well as the white man to be dependent on other sources for fuel. The North Arctic Coast eastward from Point Barrow, which is but thinly populated by natives and seldom visited by whites, has some driftwood. The possibilities of using for fuel the thick growth of vegetable matter which covers most of the

treeless regions of Alaska have been suggested, but have never been put to practical test. During the months of June and July, 1900, extensive fires swept through much of the treeless region of Nome and other portions of the Seward Peninsula. The moss and grass, when dry, were found to burn rapidly with considerable flame, and fires ran over nearly the entire region visited by prospectors during the dry months. This fact makes it evident that the surface growth of the tundra could be used for fuel, provided it were properly dried. This material has in many cases been accumulated to considerable thickness in peat bogs. With regard to the third source of fuel supply, petroleum, we have no definite knowledge of its existence in commercial quantities. It is reported to have been found in southeastern Alaska, between Yakutat and Controller bays, south of Mount St. Elias, and also on the east side of Cook Inlet near Kachemak Bay.

---

#### CRUISE OF THE ALBATROSS.

THE Fish Commission steamer *Albatross*, which sailed from San Francisco on March 11, arrived at Honolulu on March 24, as noted in SCIENCE of April 11. Heavy weather was encountered almost immediately after leaving port, and on the 12th the quartermaster of the watch was lost overboard while taking the reading of the patent log. Much interesting pelagic material was obtained with surface and intermediate nets on the outward voyage. An attempt, extending over two days, to determine the nature of the life on Erben Bank was unsuccessful, as the peculiar laval formation of the bottom resulted in the loss of all the trawls and other appliances used and subjected the dredging cable to an unprecedented strain.

The surface collecting off Waikiki on March 27 by the aid of electric light is reported by Dr. Gilbert to have been probably the most successful work of the kind ever done. Among the creatures thus obtained is a remarkable animal, first identified as a crustacean, afterwards called a worm, and finally considered a vertebrate; its eyes are on stalks half an inch long.

#### SCIENTIFIC NOTES AND NEWS.

DR. DANIEL COIT GILMAN, president of the Carnegie Institution, sailed for Europe on April 17, with a view to studying foreign scientific institutions.

PROFESSOR WILLIAM JAMES is at present abroad, in order to give his second course of Gifford lectures at Edinburgh. Dr. Gwatkin, professor of ecclesiastical history in the University of Cambridge, has been appointed to succeed Professor James as Gifford lecturer.

PROFESSOR SOLON I. BAILEY, of the Harvard Astronomical Observatory, is about to leave for the observatory's branch at Arequipa, Peru, where he will especially study the planet Eros.

DR. W. H. R. RIVERS, of Cambridge University, will shortly start on an expedition for the psychological study of the Todas of southern India on the lines of his work in Torres Straits.

M. T. OBALSKI has been sent by the French Government and the Paris Museum of Natural History to Canada to make collections and study the natural history and industries of the country.

PROFESSOR FRANZ SOXHLET, of the Munich technical school and director of the agricultural experimental station, has been made chevalier of the Order of Merit of the Bavarian Crown.

A VOLUME has been published commemorating the jubilee celebration in honor of M. Berthelot, held on the twenty-fourth of November last. Copies of the plaque struck in his honor have been presented to all members of the French parliament.

WE noted in our last issue that Professor Keen, of Philadelphia, had been made an honorary member of the German Surgical Association at its thirty-first Congress. The other honorary members were Professors Bergmann and König, of Berlin, Professor Guyon, of Paris, Professor Durante, of Rome, and Professor MacEwen, of Glasgow.

JOSEPH J. KINYOUN, M.D., Ph.D., late surgeon of the Marine Hospital Service and director of the Hygienic Laboratory at Wash-