The neighborhood of the South Pole provides analogous observations. The interior slopes of Blancanus, Tycho, Calvius, Longomontanus, are steep, and present enormous differences of level (more than 15,000 feet). Glaciers working in such conditions would have effected an intense mechanical work, would have destroyed the floors and terraces, and would have communicated a different aspect to the northern and southern slopes.

It is necessary to descend into lower latitudes to find mountain masses, well isolated, with pronounced slopes. White spots, such as that in Descartes, are not rare there, but they neither frequent elevated points nor the parts sheltered from the Sun, and have little effect on the relief of the surface. Nothing in their appearance recalls the known behavior of a glacier. The white spot of Linné, situated in the open plain, and considered by Prof. W. H. Pickering as a deposit of hoar-frost, variable during the course of an eclipse, does not exhibit variation periodic with the phase, and must rather be regarded as a permanent volcanic deposit. Even with feeble development, glaciers situated on the eastern slopes of the Apennines would have destroyed by friction or by sedimentation the transverse crevasses which we can see extending across the Mare Imbrium parallel to the boundary of the mountain masses. The valleys of Rheita and Piccolomini are intersected by numerous partitions, which would have been ruptured by even the weakest circulation of water. The dark borders of the Mare Serenitatis of Julius Cæsar, would be capable of interpretation as indicating the persistence of a source of humidity at the foot of the mountains. But a more likely explanation may be found in the expansion and bulging of the depressed surface, brought in contact with the warmer layers of the planet and restrained in its lateral expansion.

We have not been more fortunate in searching either for white spots or for traces of glacial erosions on the interior floors, sheltered from the Sun, of the great formations Petavius and Langrenus. The floors of Hevelius, Mersenne and Vieta have a manifest convexity, explicable by expansion. Glaciers clothing the interior slopes would have operated in an opposite manner by filling up the peripheric portion of the floors. The well-known halos of Lanlanc, Copernicus, Kepler and Aristarchus are too independent of the relief of the surface to be considered as snow deposits. The persistence of the long clefts of Sirsalis, traced across an elevated plateau, compels us to relegate the problematic existence of glaciers to a more remote past. Beds of glaciers formed on the exterior slopes of Aristotile and Copernicus would have been forcibly contracted toward their extremities. The furrows visible on these declivities do not disclose any such contraction.

Finally, there would remain the expedient of considering the ridges which run at many points across the *maria* as frontal moraines, corresponding to the maximum extension of a glacier. In general, these ridges follow the general contour of the mountainous border which surrounds the sea, but they branch readily, like crevasses formed by the action of a prolonged effort under a heterogeneous crust. Their direction is much more regular, less broken, than that of the border, and it is constantly convex thereto. Frontal moraines would have been obliged, on the contrary, to throw out promontories toward the center of the sea and to reproduce, in an inverse sense, with exaggeration, the sinuosities of the border being concave, instead of convex, thereto. The pronounced preference of small craterlets for the ridges compels us to consider the ridges as indicating the site of deep crevasses formed by forces acting from the interior, and afterward used for the discharge of lava. Here, again, the glacial origin has to be set aside.

There may be seen between Gambart, Landsberg and Fra Mauro, a striated and rocky region which would very easily pass for a glacier bed. But here, precisely, the circle of alimentation is wanting, as well as the frontal moraine, and the latitude is particularly unfavorable.

After what we have said of the necessary presence of the elements of water in the lunar globe, this universal, immemorial dryness demands an explanation. This is what I suggest in default of a better explanation.

In consequence of the feebleness of gravity on the Moon, discharges of matter to the surface have been particularly free and abundant. During the whole period of formation of the circles, and during the series of volcanic eruptions which have followed, the Moon has prodigally expended its internal heat, without allowing snow deposits or sheets of water to form. When the soil has set, the later eruptions which have given birth to the divergent light-ray systems have emitted such a quantity of ashes that these ashes have been able to absorb all the water which happened to be at liberty, and even that which appeared later. A

rapid and general cooling has afterward fixed the water of the lower strata, and the action of the solar rays, penetrating but little, can only manage to liberate at each sidereal revolution the humidity from a thin layer.

We shall arrest our exploration here. It could be prolonged, I believe, without eliciting any serious indication in favor of the presence of glaciers on the Moon. If they have been there in the past, they have not survived the volcanic period, and even their traces have perished. All that we can concede to our satellite at present would be banks of ice sheltered in the formations of the Polar regions, screened from the heat of the Sun, but incapable of creating around them the song of flowing waters, and the joyous awakening of life.

It is with regret that I submit for your assent this negative conclusion. It might have been agreeable to think that terrestrial analogy would enable us to decipher a few pages in the great book of the sky. But the rights of truth surpass all. If our nearest neighbor resembles us so slightly, it would be vain to hope that the more distant planets, or the stars, may reserve for us an easier task. We must not cease, however, to analyze with curiosity those frail messengers from space, rays of light. But if we are wise, we shall not depreciate, by comparison with worlds so little known to us, the globe upon which we live; and we shall keep better our affection for that great country which is the first offered to our eyes, and which, by the sacrifices which it demands as much as by the spectacles which it provides, multiplies in us the reasons for living and the power to love.

Childhood Among the Labrador Eskimo

As the child grows up, it plays at the work of its elders. The girl helps her mother around the house, or plays with her dolls' and miniature house and utensils. Small children are provided by admiring relatives with small ivory carvings of animals and birds, with which they play by the hour, arranging them for various plays and hunts.

The boys early receive small harpoons and bows and arrows, and try their skill on small birds and floating pieces of wood. The sling is a favorite amusement in summer, when myriads of waterfowl visit the shores. When the "young ice" forms on the shore-line, the boys delight in making a miniature boat out of one of the cakes and paddle around with a little oar, or leap from cake to cake, following the leader, or perform an impromptu song and dance on a shifting "pan." Although Eskimo children do not learn to swim, I have never heard of one of them being drowned. Their hardiness is something wonderful, perhaps due to letting them run around the iglu naked when young. I have seen them in the early spring, only a few weeks after the ice has broken up, running up and down the beach, and splashing and wading in the icy water, perfectly naked, and evidently having the times of their lives.

Football is a favorite amusement with Eskimo of all ages. The football is a small round ball made of sealskin and stuffed with reindeer hair. In Labrador, as in Greenland, it is whipped over the ice with a thong loop attached to a wooden handle. It can be caught in the air and returned with terrific force with this instrument. It is said that the Eskimo did not like to play football with the Tunnit, because they were so strong that it was dangerous. Rink gives us several stories from Labrador and Greenland of the myth hero overcoming his opponents in football.

The girls and women play handball with a larger and softer ball. A game which both sexes play is a sort of basket ball, in which the ball is thrown by the players on one side to each other, while the others endeavor to snatch the ball in the air. The women also play a sort of football "solitaire," in which they see how long they can keep the football in the air between their toes and hands, without moving from the spot.

The children play tag, and exercise in running and the Eskimo "hop, skip, and jump." They engage in imitation of the pursuits of their elders, driving each other as dogs, stalking and shooting the one who is "it" as the deer or bear or seal, as the case may be, and generally enjoying themselves as children do in all parts of the world. In one thing the Eskimo child has the advantage over white children. He is never punished. On the other hand, I have never seen an Eskimo child disobey. The feeling between children and parents appears to be one of mutual respect and goodwill. The underlying psychology seems to be sound as far as a primitive race is concerned. It probably would not work as well with white children, who are accustomed to coercion and restraint.—*Geological Survey, Canada Anthropological Series, No. 14, By E. W. Hawkes.*

Eskimo girls play their dolls are babies as white children do. They undress them and put them to bed at night, and dress them up again in the morning. During the day they carry them around in their hoods.

Pocket Stoves of Japan

By N. Kawaguchi

THE *kwairo*, or pocket brazier, is used by the Japanese to place in the clothing for heating purposes, and the fuel used in it is known as *kwairo-bai*, there being considerable rivalry as to who can invent the best fuel—a very difficult matter, since it must not emit smoke or fumes. The fuel is put up in the form of a roll like sausage, which is lighted and shoved into the small tin stove that looks something like a cigar case of metal. The fuel costs no more than 3 *rin*, or about one-third of a *sen*, and will last for three hours, giving considerable warmth to the part of the body where it may be placed. One put inside the bosom of the kimono prevents a third-class train journey from feeling too chilly. Delicate pupils keep one in their clothes while at school in winter, and so equipped anyone may sit comfortably in an unheated room. The aged and the cold-footed sleep with the *kwairo* at their feet. Cramps or colic can be easily soothed by placing one across the pit of the stomach. In the Russo-Japanese war many a benumbed soldier saved himself by placing one in his bosom. In the present war Russia ordered a large supply for her soldiers, and immense quantities have been shipped to that country.

The excellent fuel now used in the pocket-stove was invented in 1832 by a man named Sokichi Yamazaki, of Tochigi, in the province of Shimotsuke; and a company was formed by the leading tradesmen of the town for its manufacture. As the article was left to private houses for making, the quality was not satisfactory, and so the Mayor of the town had a proper factory established in 1904, the object being to give work to widows and orphans of the Russo-Japanese war, and a trust has since been formed for the manufacture of the fuel, and the quality has been greatly improved. The annual production rose to a value of about 58,000 *yen*, but the orders from Russia have increased the trade a hundredfold. Now the output is valued at about 160,000 *yen* a year. French missionaries from Japan introduced it into France, and now there is a considerable export to that country.

Although Tochigi invented the fuel for the pocket-stove, the town has not been much heard of in the trade, as the Tokyo and Osaka merchants bought up the output, and it could only be obtained from them.

The materials from which the pocket-stove fuel is made are hemp stalks, mulberry, the *kozu* and the *catalpa* plants and a kind of vegetable oil, as well as pulverized nut rinds and corn cobs. But the best is made from hemp stalks from which the fiber has been taken. These are turned into charcoal. The method is simple. A big bundle of the hemp stalk is put in a hole in the ground like a furnace, lighted and smothered so as to smoulder without air until carbon is produced. This is pounded in a mortar. Fifty *sen* worth of raw material makes up into goods sold for 2.50 *yen*. The farmers devote spare time to this occupation, and make an extra penny. The material thus produced is sent to town to be made into rolls for the pocket-stove. As the raw material from which the fuel is made cannot be used for anything else, the profit is great, usually about 50 per cent. In the final composition of the *kwairo-bai* a little saltpeter is used to facilitate combustion, and, also, the leaf of a tree resembling the maple is used to stick the powder together.

Of the fuel there are two kinds, one used for the bosom-stove and the other for bed use. The former is soft, and the latter hard. The fuel has to be put into the tiny stove very carefully, as any mistake or awkwardness spoils the attempt. The fuel is enclosed in a special kind of paper, without which it will not be successful. The hard fuel is most difficult to make. The powdered carbon has to be kneaded into a paste mixed with the leaf of the tree already mentioned, and then pressed into a pipe making it like a sausage. It has then to be dried in the sun in a suitable drying place.—*The Japan Magazine.*

Light, Power and Irrigation in California

HYDRO-ELECTRIC plants have reached a high state of development in California. At present there are 110 reservoirs with a storage capacity estimated at 235,780,000,000 gallons, and the plants served produce a million horse-power in electric current which is used for light, and for power not only for running car lines but in factories as well. In many cases the current has to be carried great distances from the generating plants to the place where it is used, and as high as 150,000 volts are carried in some of the lines. One most useful feature that has been developed in planning some of the California plants is the utilization of the water, after it has done its work in producing electricity, for irrigation; and where this cannot be done directly it has in some cases been found feasible to use electric power to pump water for irrigating what would otherwise be unproductive lands.