

five passengers and to carry ballast of a minimum weight of 1,000 pounds. The building of a machine to meet these requirements would not in any way be difficult. The other machines should be biplanes of much lighter construction, seating only a pilot and an observer. The primary and most important business of these machines would be to search out and report upon possible landing places in the interior.

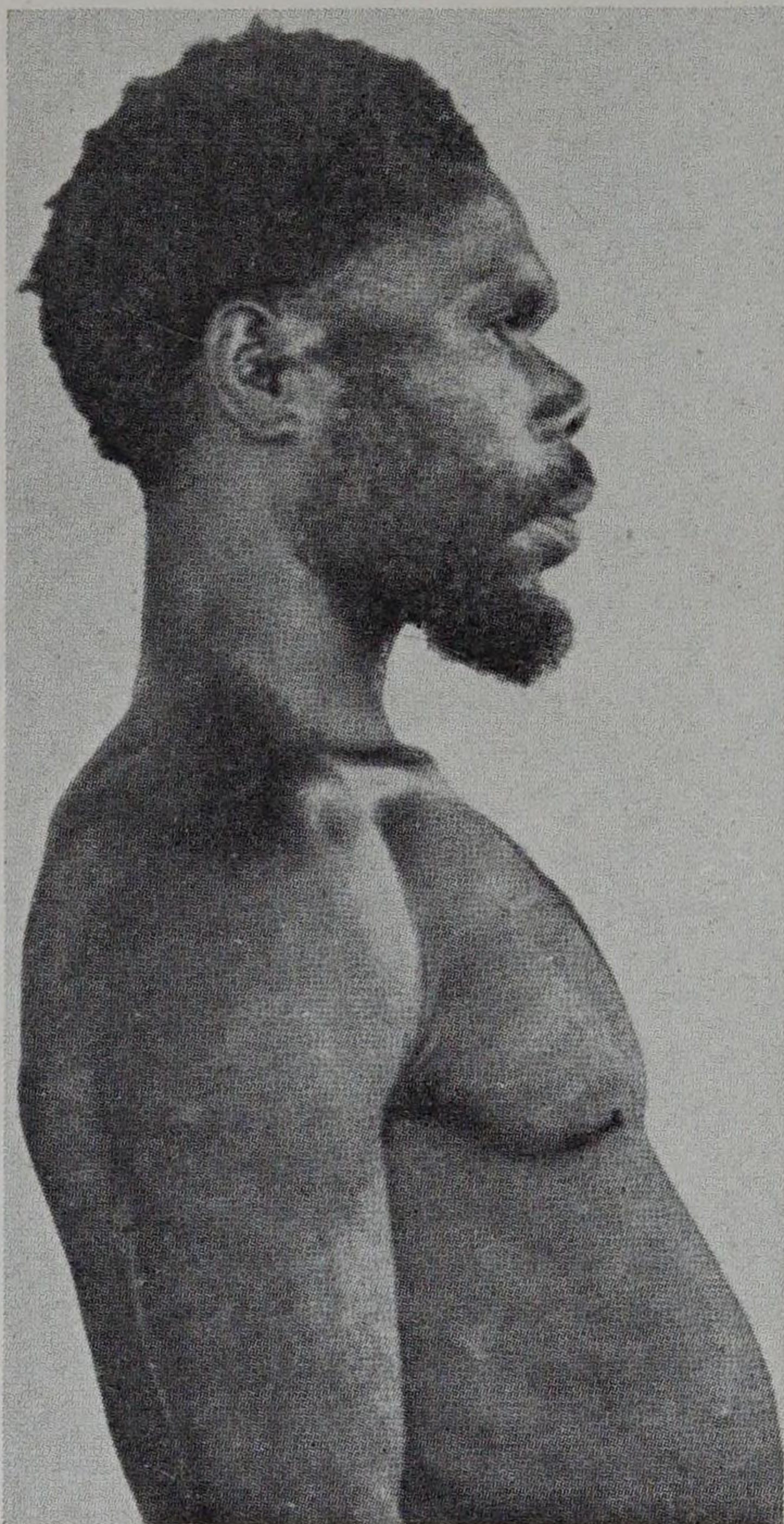


FIG. 7—A native (Papuan) of Bukaua, northern shore of Huon Gulf, German New Guinea.

Having located and fixed upon a suitable alighting place, the lighter machines would return to the depot camp at the coast. Thereupon, when meteorological conditions are as favorable as possible, the larger, freight-carrying machine would proceed to the selected landing place and discharge passengers, a first instalment of equipment, and provisions. This done, it returns to the depot in order to go back again to the inland camp without passengers, but with a full load of supplies. Regular trips between the two camps would subsequently be made as required, moving provisions and equipment from the coast to the inland camp, and returning with collections from the interior, to be immediately taken in hand and packed by the staff at the coast. Here would be stationed the lighter machines and their pilots, in constant readiness for duty.

The inland camp could be maintained until the surrounding country was carefully and systematically explored and mapped. With this done the camp could easily be moved to some other suitable site, and from this new center fresh exploration and research could be carried on. Once a satisfactory base has been established in the interior great possibilities are thrown open for exhaustive research work for a number of years to come.

Such matters as suitable machines, petrol, hangars, etc., are, as I shall show in what follows, easily disposed of, and of quite secondary importance to another matter which is momentous and decisive, that is, whether it is possible to land at all in the interior.

As early as three years ago, when I first met Sir William McGregor in Brisbane, I discussed with him, at length and in detail, my plan for an expedition into the interior of New Guinea by way of the air. He took

up this novel idea with great interest and considered the project well within the limits of possibility. To my question as regards landing prospects he told me that for his part he considered there existed especial facilities, to judge from the character of the country in the highest parts of the Owen Stanley Range, which he had been the first to visit.

Thanks to Sir William's researches we now know that the tree limit—i. e. the line above which the primeval forest does not extend—on the coastal mountain ranges begins at an altitude of about 11,500 feet. Above this height vegetation becomes more and more sparse, with dwarfed trees and low-growing brushwood, gradually changing into alpine meadows of soft grass, and prostrate herbs. When Sir William approached altitudes of 13,000 feet he met with a very quaint vegetation, in many respects reminiscent of the Alps and of northern Europe. Here, practically on the equator, he regaled himself with

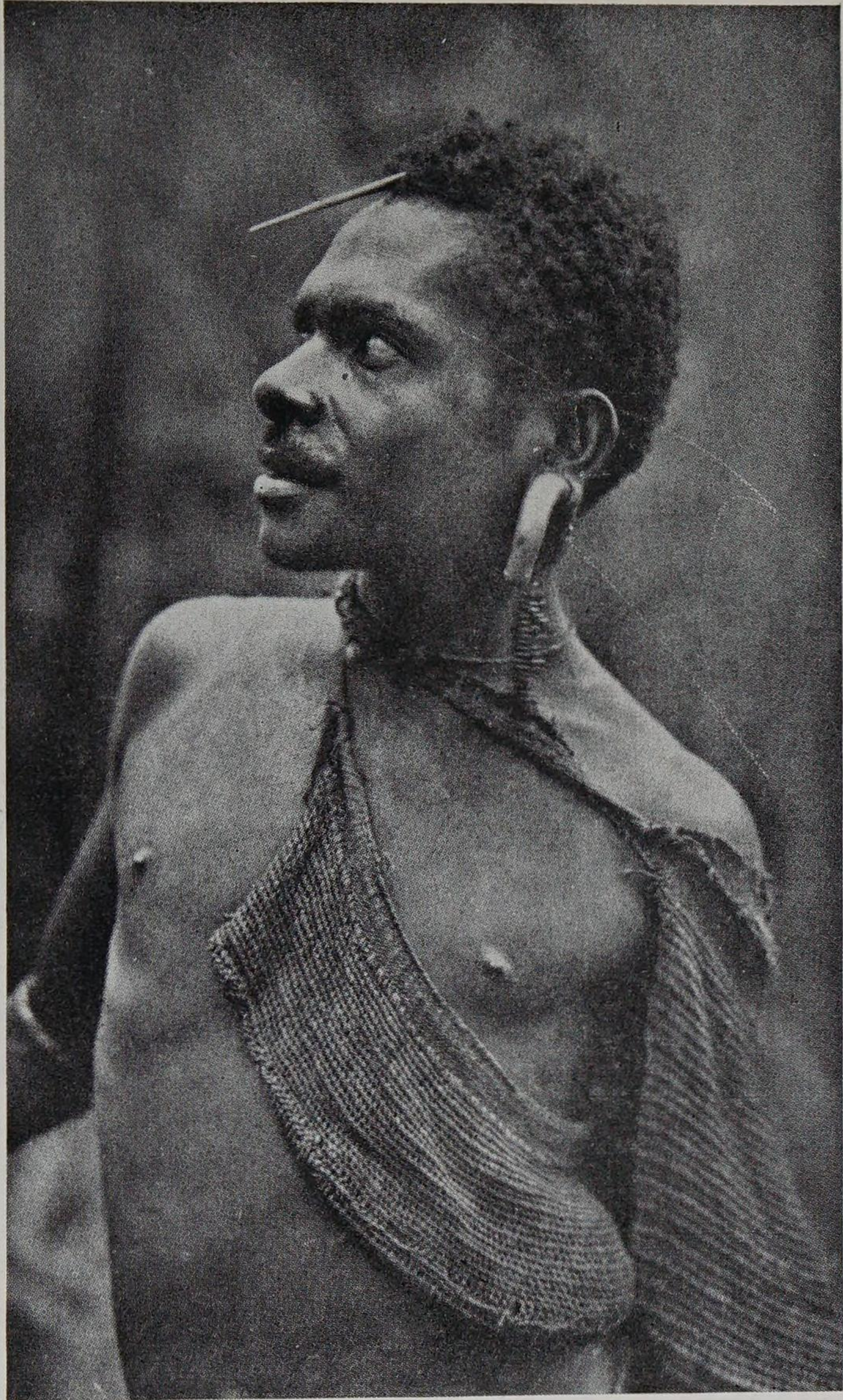


FIG. 8—A Tapiro pygmy of New Guinea. (From A. F. R. Wollaston's "Pygmies and Papuans: The Stone Age To-Day in Dutch New Guinea," London, 1912.)

strawberries picked off the grassy lawns. He saw here several old acquaintances of his childhood: lady's mantles, with crystal dewdrops sparkling in the tropic sun, alp roses of the well-known rhododendron family in a variety of species, *Pedicularis*, *Lactuca*, *Leontodon*, *Myosotis*, *Ranunculus*, *Hypericum*, *Epilobium*, *Galium*, *Gentiana*, *Senecio*, *Veronica*, *Potentilla*, and other familiar northern forms.

In the interior, where highland plateaus with peaks covered with dazzling white snow predominate, the climate is bound to be considerably

more temperate. From this it may be inferred that the tree limit will be found at a correspondingly lower altitude. In any case, the alpine meadows of the interior are sure to be far more widely distributed, and herein we see *the first of the landing possibilities on which we are reckoning*.

It is extremely probable that there is no connected forest belt in the interior. Indeed, it may be strongly doubted whether the primeval forest, composed as it is of Indo-Malayan elements, has been able to extend beyond and above the coastal ranges that shut off the interior of the island. It is, on the contrary, most probable that there will be found open savannas,



FIG. 9—Women potters, Laukanu, German New Guinea.

After the pebbles have been kneaded out of the clay, it is shaped into rolls 8 to 12 inches long (note the woman on the left; a number of rolls may be seen on the right edge of the photograph). These are bent into rings and placed one above the other to make the first rough form of the vessel.

sparsely dotted with gum trees, i. e. bush of North Australian character, and with the ground covered with soft grass. Moreover, such patches of eucalyptus bush are known to exist in the coast forests of New Guinea, where they appear, here and there, hemmed around by the dense and gloomy jungle.

There is reason to believe that the primeval forest in its compact form has not become predominant in the interior. The high coastal ranges and a more temperate climate must here have constituted a hindrance to its progress. On the rises and in the valleys there will probably be found open plains or thinly wooded forests, and thus we may count upon *a second possibility of landing*.

From our actual experience of the island—though, so far, very slight—we already know of the existence, here and there, of open, light-colored fields, some of them measuring many miles across. At first they were thought to be grass-grown, sun-bathed meadows, but this illusion was soon dispelled when the real nature of these lighter patches became known.

Fond hopes had been entertained that these tracts might some time be thrown open to cattle-rearing and agriculture. It was found, however, that the presence of these open fields was a sure sign of a barren and sterile soil, as they were only covered with a stiff and harsh kind of grass, the so-called *alang* grass (*Imperata arundinacea*), which in the dry season stands parched and yellow. On these plains a landing would not be practicable off-hand, but by dropping fire-bombs from the smaller, scouting aëroplane the grass could easily be burnt off, and in that way suitable landing places would be ready in a few days. Thus we have here *a third, and very excellent, possibility of landing.*

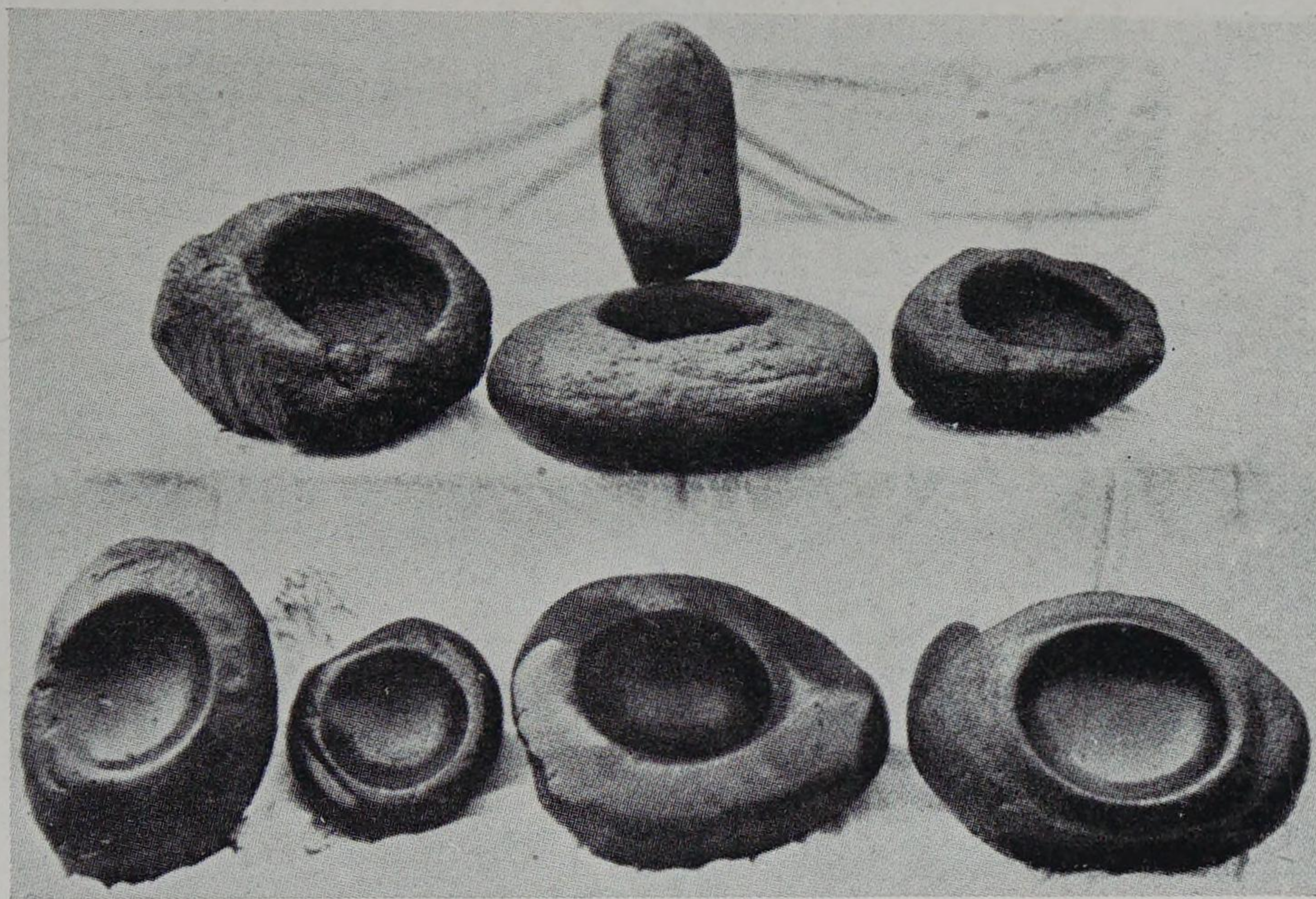


FIG. 10—Stone mortars, relics of prehistoric inhabitants of New Guinea.

By the foregoing I have shown that three different possibilities exist in the way of landing, viz. the open alpine meadows, covered with soft grass and low-growing herbs; the open or thinly wooded savannas that will probably be found in the interior; and, lastly, the *alang* steppes that are scattered here and there.

Personally, however, I am of opinion that a fourth possibility presents itself, and a most excellent one. In a country of so mountainous a character as New Guinea, with snow-clad peaks attaining a height of nearly 16,000 feet, and valleys in between, inland lakes are bound to exist. That such may be found even in the densest jungle was taught us by our experience in the primeval forests of Queensland, of which I have personally a thorough knowledge. In those jungles, quite unexpectedly, one comes upon splendid and gleaming sheets of water, mirroring the dark mass of the primeval bush by which they are walled in on all sides. They are of volcanic origin, or so-called crater lakes. Now that we know how intense