

II.

THE SALVAGE ISLANDS: SOME GEOGRAPHICAL, GEOLOGICAL AND HISTORICAL NOTES

By **ARMANDO J. G. FIGUEIRA** ¹

With 2 figures.

The Salvage Islands are an archipelago of 3 small uninhabited Portuguese islands. They lie between $30^{\circ} 01' 35''$ N and $30^{\circ} 09' 10''$ N latitude and between $15^{\circ} 56' 15''$ W and $16^{\circ} 03' 05''$ W longitude, between Madeira and the Canaries, but nearer the latter.

The Salvage Islands consist of 2 groups, connected by the 1.000 m isobath. The more northern, the *Selvagem Grande* or *Selvagem* with its adjacent islets *Palheiro da Terra* and *Palheiro do Mar* (remainders of volcanic peaks separated from the *Selvagem Grande* by a depth of 40 m) and the other, to the southwest, separated from it by a channel about 10 miles wide, composed of the *Selvagem Pequena*, the *Ilhéu de Fora* and other smaller islets.

The *Selvagem Grande* is by far the largest and highest of the islands, having an area of about 2.46 Km². It is roughly of pentagonal shape and is topped by a plateau about 100 m high, where there are 2 small peaks, the *Pico da Atalaia* (153 m) and the *Pico dos Tornozelos* (136 m). The altitude of the island varies between 70 and 100 m and the cliffs are about 90 m high, steep and in places vertical. The principal headlands of the island are *Ponta da Atalaia*, *Ponta de Leste*, *Ponta Espinha*, *Ponta do Corço da Areia*, and *Ponta do Risco*, and the most important coves are *Enseada das Caçarras* (the best landing place and from where the interior is reached most easily) and *Enseada das Pedreiras*. At some distance of the coast to NW of the island there are, as already mentioned, two small islets, *Pa-*

1) Museu Municipal do Funchal, Madeira.

lheiro da Terra (alt. 23 m) and Palheiro do Mar (alt. 12 m) and quite close to the coast and almost connected with it, two much smaller islets, *Ilhéu Preto* and *Ilhêuzinho*.

The group to SW is formed by the *Selvagem Pequena* (formerly called *Pitão Grande*), by the *Ilhéu de Fora* (formerly *Pitão Pequeno*), and by other smaller islets, all within the 20 m isobath. The *Selvagem Pequena* is of very irregular shape and its constantly emerged portion measures about 800 m by 500 m, covering an area of 0.16 Km². During the spring-tides an area of about 0.65 Km² becomes uncovered at low tide. The island is low, its highest point being the *Pico do Veado* (49 m). Nearly all its constantly emerged portion is covered with calcareous sand. SW of the *Selvagem Pequena* there are some small islets, the most important being the *Ilhéu Grande* (6 m alt.) 200 m distant, the *Ilhéu do Sul* (5 m alt.) 700 m distant, and the *Ilhéu Pequeno* (3 m alt.), also 700 m distant. The *Ilhéu de Fora* is separated from the *Selvagem Pequena* by the *Canal da Selvagem Pequena*, 1.200 m wide and of variable depth which attains as much as 12.5 m. The constantly emerged portion of the *Ilhéu de Fora* measures about 500 m by 300 m, and has an area of 0.071 Km²; it is very low, its greatest height being 18 m. During the spring-tides an area of about 0.29 Km² becomes uncovered at low tide. To the North the *Ilhéu de Fora* extends along a wide, long, rocky shelf where the *Ilhéu Alto* (8 m alt.), the *Ilhéu Comprido* (8 m alt.) the *Ilhéu Redondo* (3 m alt.) and the 3 *Ilhéus do Norte* emerge.

Except in the South and Southwest the coast of the *Selvagem Grande* is composed of steep cliffs due to marine erosion. In the littoral there are several caves, two of which, the *Gruta do Inferno* (below the *Pico do Inferno*) and the *Gruta das Pardelas* (in the *Enseada das Pardelas* or *Enseada das Pedreiras*) are rather large. Of these two caves the *Gruta do Inferno* is the more difficult to reach and is, therefore, only rarely visited. In the upper part of the island there are calcareous sands that must have been deposited there at a time when the coast sloped gently to the sea.

Geologically the Salvage Islands are of volcanic origin and are situated on the edge of the submarine platform of the Canary Islands. The visible basement of the *Selvagem Grande* is composed of phonolites and nephelinites. On these, during the Miocene and when the island was still submerged, a thick layer of yellowish calcareous sand was deposited. This sand also penetrated the cracks caused by the volcanic explosions giving

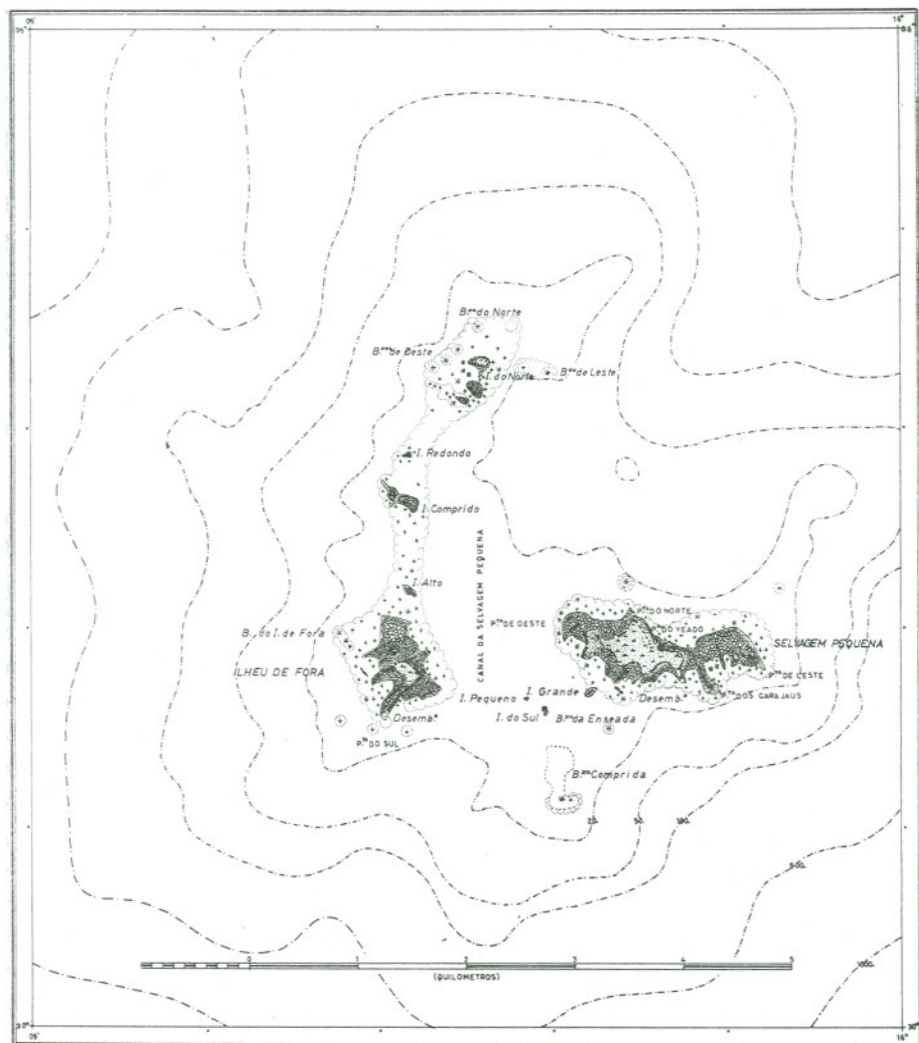


Fig. 2. — *Selvagem Pequena* and *Ilheu de Fora*. Drawn by J. H. F. Fernandes after chart 105, issued by the Portuguese Hydrographic Department. Simplified.

rise to calcareous dykes. Later, at a time when the island was still under water, tuff, ashes, volcanic sands and *lappili* were deposited on these calcareous sands. Finally, in an apparently not too distant past, the last eruptions covered almost all the island with a volcanic cap. That the calcareous layer as well as the ashes, volcanic sands, etc., were deposited when the island was still submerged is proved by fossils of the *Second Mediterranean Stage* which have been found in these formations. As these fossils were found at an altitude of about 70 m, the island must have suffered an uplift of at least this amount.

The islets that form the group of the *Selvagem Pequena* represent remainders of volcanic peaks. The *Selvagem Pequena* and the *Ilhéu de Fora* are formed almost entirely of dykes and lack the basaltic cap which exists on the *Selvagem Grande*, either because there was no corresponding volcanic eruption or because the sea has destroyed it. There are no phonolites on these two islands, but only nephelinites in a dyke of the south coast of the *Selvagem Pequena*. In the center of the *Selvagem Pequena* and the *Ilhéu de Fora* there is a layer of calcareous sand.

At present the only product of economic value of the Salvage Islands, apart from fish, are the nestlings of CORY's Shearwater (*Puffinus diomedea borealis*) which are taken each year by the thousands and salted for consumption by the poorer population of certain parts of Madeira. The down and the oil contained in the stomachs also have some commercial value. This annual hunt is possibly of ancient origin, but the present author has not been able to find any information about the date when it commenced. SLOANE, who visited Madeira towards the end of the 17th century, is possibly the oldest author who refers to the nesting of CORY's Shearwater (which he calls *Hirundo Marina major* in «some uninhabited Islands and Rocks between that place [Madeira] and the Canary Islands, known by the name of *Salvages*, where they multiply and increase yearly in prodigious numbers, not being interrupted by mankind»). From the fact that SLOANE does not mention the hunt of the nestlings of CORY's Shearwater one may conclude that it only started at a date posterior to his visit to Madeira, because it is not likely that this curious practice would have escaped the observation of this notable collector and physician.

It is likely, because of their relative proximity to the Canaries, that the Salvage Islands were known during the Classical Antiquity. However, nothing concrete exists as to the date of their discovery. In the Library

of Munich, in a collection of manuscripts organized in Lisbon in 1507 by VALENTIM FERNANDES, a Moravian of German extraction who lived in that town, there is an account, in Latin, by DIOGO GOMES, a Portuguese navigator of the 15th century, which contains the oldest known historical reference to the Salvage Islands. In his account* DIOGO GOMES states that the Salvages were discovered by the Portuguese. However, in the century immediately after, GASPAS FRUCTUOSO, historian of the Portuguese and Spanish islands of the Eastern North Atlantic, believes that the Salvage Islands «seem to have been found after the Canaries by Castilians» and AZEVEDO, in 1873, in his edition of FRUCTUOSO'S «*Saudades da Terra*» says «as regards the [discovery] of the Salvages, so far we have found no information».

It is possible that the almost bare aspect which the *Selvagem Grande* now presents is due mainly to the goats introduced there in the 15th century and to whose introduction DIOGO GOMES refers in his account. Nowadays they are extinct in the island but, at least towards the end of last century, some still existed there, according to BARING and GRANT.

LITERATURE CONSULTED

Anonymous:

1944. Roteiro do Arquipélago da Madeira e Ilhas Selvagens. *Direcção de Hidrografia, Ministério da Marinha*. Pp. I-XXIII + I-166, 47 plates, 7 maps. Lisboa.

[Contains the best description of the geography of the Salvage Islands so far published. Chapter IV (Ilhas Selvagens) pp. 137-150. To be consulted together with the Charts 105, 156 and 157, also published by the Portuguese Hydrographic Department.]

Baring, C. & Grant, W. R. Ogilvie:

1895. An Expedition to the Salvage Islands. *The Zoologist*, 3rd ser., vol. XIX, Nr. 227 (November), pp. 401-417.

Bourcart, J.:

1946. Géologie des Iles Atlantides. In: Contribution à l'étude du peuplement des Iles Atlantides. *Soc. Biogéogr.*, Mém. VIII, pp. 9-40, 8 figs. Paris.

Fructuoso, G.:

1873. *As Saudades da Terra* pelo Doutor Gaspar Fructuoso. Historia das Ilhas do Porto-Sancto, Madeira, Desertas e Selvagens. Manuscrito do Seculo XVI anotado por Alvaro Rodrigues de Azevedo. Pp. I-XI + I-917, 1 plate. Funchal.

[Azevedo's annotated edition of Fructuoso's «*Saudades da Terra*», manuscript of the 16th century. Salvage Islands, pp. 309-310.]

* The part referring to the Salvage Islands is transcribed in an *Appendix*, according to what was published in 1940 in an edition of the Portuguese Academy of History.

- Gomes, D.:
1940. De insulis primo inuentis in mar oceano occidentis, et primo de insulis Fortunatis, quae nunc de Canaria vocantur. In: O Manuscrito «Valentim Fernandes» oferecido à Academia por Joaquim Bensaúde, Académico Titular Fundador. *Publ. Comem. Duplo Cent. Fundação Restauração Portugal, Academia Portuguesa de História, Lisboa.*
[Edition, published in Lisbon in 1940, of Diogo Gome's manuscript which contains the oldest known reference to the Salvage Islands.]
- Jérémine, E.:
1950. Contribution à la connaissance lithologique de la Grande Salvage. *Bull Inst. Océan.*, No. 969, pp. 1-10, 1 fig.
- Joksimowitsch, Z. J.:
1910. Die Zweite Mediterranstufe von Porto Santo und Selvagem. *Zeits. Deutschen Geol. Gesel.*, Bd. 62, Heft 1, pp. 43-96, 7 figs., 3 plates.
- Lowe, R. T.:
1869. Florulae Salvagicae Tentamen: or a List of Plants collected in the Salvages or Salvage Islands, etc. Pp. 1-24. *London.*
- Major, R. H.:
1868. The Life of Prince Henry of Portugal, surnamed the Navigator; and its results: Comprising the discovery, within one Century, of half the world. With new facts in the discovery of the Atlantic Islands; a refutation of French claims to priority in Discovery; Portuguese knowledge (subsequently lost) of the Nile Lakes; and the history of the naming of America. From Authentic cotemporary Documents. Pp. 1-111 + 1-487, 6 pls. 7 maps. *London & Berlin.*
- Morais, J. C.:
1940. Arquipélago das Selvagens. Uma Missão Geológica a bordo do Navio Hidrográfico Carvalho Araújo. *Publ. Mus. Mineral. Geol. Univ. Coimbra*, No. 11, pp. 1-VII + 1-39, 3 figs., 10 pls.
[A recent paper on the geology of the Salvage Islands on which the geological notes of the present paper were based.]
1948. Os arquipélagos da Madeira e Selvagens. *Bol. Soc. Geol. Portugal*, vol. VII, fasc. 1-2, pp. 1-32, figs. 1-30.
- Sarmiento, A. A.:
1906. As Selvagens. Pp. 1-41, 3 maps. *Funchal.*
[A paper on the Salvage Islands which should be consulted with caution, as it contains mistakes, such as the statement that Pico do Veado, on the Selvagem Pequena, has an altitude of 140 m, and that Lowe, in his *Florulae Salvagicae Tentamen*, gives the name of Pião dos Tornozeiros to the Selvagem Grande.]
- Sloane, H.:
1707. A voyage to the Island Madera, Barbados, Nieves, S. Christophers and Jamaica, with the Natural History of the Herbs and Trees, Four-footed Beasts, Fishes, Birds, Insects, Reptiles, etc., of the last of those Islands, etc. Vol. I, pp. 1-7 + 1-cliv + 1-264, 154 pls., 4 maps.
[Salvage Islands, p. 4.]
- Teixeira, C.:
1950. Notas sobre a Geologia das Ilhas Atlântidas. *Anais Fac. Ciên. Porto*, T. XXXIII, fasc. III-IV, pp. 193-233, 6 figs., 16 pls.
[A useful synthesis on the geology of the Azores, Madeira, Salvages and Cape Verde Islands, with some notes on the geology of the Canaries. Part on the Salvage Islands, pp. 204-206.]

GLOSSARY

<i>Canal</i>	Channel
<i>Grande</i>	Great
<i>Gruta</i>	Cave
<i>Ilhéu</i>	Islet
<i>Pequena</i>	Small
<i>Pequeno</i>	Small
<i>Pico</i>	Peak
<i>Ponta</i>	Point
<i>Selvagem (Ilha)</i>	Salvage Island
<i>Selvagem Grande (Ilha)</i>	Great Salvage Island
<i>Selvagem Pequena (Ilha)</i>	Small Salvage Island

APPENDIX

***De insulis primo inuentis in mar oceano occidentis,
et primo de insulis Fortunatis, quae nunc de Canaria vocantur.***

.....

Fol. 287

DE INSULA SELUAGEM

Die quadam veniens ego Dioguo Gomez vltima vice de Guinea in medio inter insulas de Canarias et insulam de Madeyra vidi insulam, et fui in ea, quae vocatur ylha Salvagem. Et est sterilis, et nullus habitat in ea, nec habet arbores nec flumina. Istam insulam inuenerunt carauelae Domini Infantis. Et venientes in terram inuenerunt multam vrsellam, quod est quaedam herba, quae tingit rubeum colorem seu pannum, et erat ibi in habundantia magna. Et aliqui postea rogauerunt Dominus Infantem, vt eis daret licentiam, vt irent illuc cum suis carauelis, et illam vrsellam deferri possent ad Angliam et Flandriam, vbi valet multum. Et Dominus Infans dedit eis licentiam vt ei darent quintam partem de lucro, quem facerent. Et Dominus Infans misit ibi capras, masculos et femellas, quae creuerunt magna multitudinem.