

MODERN HISTORY AND PHYSICAL GEOGRAPHY OF EQUATORIAL GUINEA

J. ALVAR¹, S. MAS-COMA² & M. CARRASCO¹

¹*Centro Nacional de Microbiología, Virología e Inmunología Sanitarias, Instituto de Salud Carlos III,
Ctra. Majadahonda-Pozuelo km 2.2, 28220 Majadahonda, Madrid, Spain*

²*Departamento de Parasitología, Facultad de Farmacia, Universidad de Valencia,
Av. Vicent Andrés Estellés s/n, 46100 Burjassot - Valencia, Spain*

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ABSTRACT: The discoveries of Equatorial Guinea territories and their history up to the present are described. Special emphasis is given to the Spanish health care presence, both up to the year of the independence in 1968 and after the change in regime in 1979. The I and II Cooperative Plans between the Kingdom of Spain and the Republic of Equatorial Guinea covered the periods 1986-1989 and 1990-1993, respectively. A new turn took place in 1993, with cooperation becoming the responsibility of non-government organizations (NGOs) and official health care or scientific institutions, though the Spanish Agency for International Cooperation (Agencia Española de Cooperación Internacional - A.E.C.I.) continues to finance the effort. The geographic characteristics of Equatorial Guinea are described concerning both island and continental parts. Geological descriptions of Río Muni and Bioko island are given. The typically equatorial climate and rainfall are finally summarized.

KEY WORDS: Equatorial Guinea, modern history, Spanish explorations, Spanish health care presence, physical geography, climate and rainfall.

MODERN HISTORY

Since the XV Century, Portuguese, Catalans, Majorcans, Genovese and also North Africans frequented many points in Equatorial Africa, though the Portuguese made the major discoveries along the Atlantic coast. Thus, on December 21, 1470, the navigators Don Pedro Escobar and Juan de Santarem discovered an island that they promptly named Sao Tomé, in honour of the Saint of that day. This island was followed by another, Annobón, on New Year's Day, 1471, and a third on January 17 of that same year, called San Antonio (or the Principe Island) in honour of Don Juan, who largely impuled these explorations. The year 1472 Fernam del Póo saw the discovery of another island which was first named la Hermosa and which later received his name. This island is presently known as Bioko. The crowning of Juan II of Portugal led to an increase in the number of explorations: in this period, Bartolomé Díaz rounded the Cape and explored the river Niger. For three centuries the Portuguese occupied the entire region. However, in 1777, Doña María I. Queen of Portugal, ceded the islands of Fernando Póo and Annobón to Carlos III. King of Spain, to thus allow navigation on the rivers Gabón, Cameroones, Santo Domingo, Cabo Formoso and others, in exchange for the island of Santa Catalina and Colonia del Sacramento, on the Atlantic coast of South America.

In 1778, a Spanish expedition captained by Argelejos set sail from Buenos Aires to take possession of the two islands. On October 21 the Spaniards anchored in a bay of the island of Fernando Póo named San Carlos Bay, in homage to the King. There he founded the town of the same name (now known as Luba). On November 26, the official presentation on Annobón met with rejection from the 3000 local inhabitants, who mistakenly regar-

ded the Spaniards as English slave traders in control of the slave trade in the Gulf of Biafra. The act of possession on Annobón was postponed, and in fact official possession failed to occur over the following years as a result of the gradual deterioration and uprising of the Spanish garrison on the island: of the 547 men who set out from Argentina, 370 died of disease in only 7 years. The Spanish military presence gradually disappeared.

In 1827, with the pretext of establishing a Jury for Repression of the Treaty (slavery) in the Gulf of Guinea and potentiate the palm oil trade, the English Admiralty dispatched a warship to Fernando Póo with troops and Cruman workers (native fishermen recruited along the Central African coast), under the command of William F. Owen who, on finding the Spanish garrison abandoned, promptly occupied it and equipped it with artillery. On December 25, 1827, the English founded the town of Clarence, in honour of the Duchess of Clarence, the wife of who would later become King William IV of England. The population of this town grew with the presence of slaves freed from slave ships captured in the region, and known as «Fernandinos». In fact, however, these individuals were soon contracted to work under miserable conditions in the cocoa plantations of the English West African Company. The international protests by Spain over the occupation of the town and its deterioration as a result of market competition from likewise English-controlled Freetown in Sierra Leone (leader in the struggle against the slave trade and in securing control of the gulf trade), caused the English to leave Clarence in 1832. As this was not followed by military custody of the island on the part of Spain, England in 1839 strove to purchase both Fernando Póo and Annobón, with the aim of consolidating its economical power in the region and control commerce along the river

Niger. Indeed, a pre-agreement was reached to begin negotiations in 1841.

In 1843 the Spanish brigantine, *Nervión*, captained by Don Juan José de Lerena, arrived in the Bay of Corisco, at the mouth of the river Muni. There the Spaniards issued Spanish citizenship certificates, in the name of Queen Isabel, to the inhabitants between the river Campo and Cape Esteras. The natives on the islands of Corisco, Elobey Grande and Elobey Chico spontaneously adhered to the Crown that same year. The Spaniards took official possession of the island, changed the name of the town of Clarence to Santa Isabel (today known as Malabo), and designated the liberal John Beecroft as Governor. The West African Company with its tyrannical laws was expelled. The town entered a period of prosperity.

In 1858, an expedition left Cádiz, consisting of the warships *Vasco Núñez de Balboa*, *Gravina*, *Cartagenera* and *Santa María*, under the command of Captain Don Carlos Chacón, who was named Governor of the Spanish possessions. The fleet anchored in proximity to Corisco, where Spanish citizenship was extended to other kings and inhabitants in the continental region, dissatisfied with the French presence in the zone. This was progressively followed by the arrival of Spanish missionaries and traders, along with Frenchmen, Germans and Englishmen; these even established a regular ship route along the West African coast, generating frequent friction with the Spaniards and locals. As by 1862 the island had still not been sold off as promised back in 1841, the English dispatched a warship to the zone. As a result, Spain invalidated the commercial licenses of the English on both islands, and their commercial interest consequently faded.

THE SPANISH EXPLORATIONS DURING THE XIX CENTURY

The splendid estuary of the river Muni led the Spanish explorer Manuel Iradier (Vitoria 1854 - Balsaín 1911) to dream of a river connecting with the great lakes seen by Burton and Speke in East Africa. The project, backed by Stanley, required the sum of one hundred thousand Spanish pesetas, which were requested from the Spanish Government and different scientific societies, to no avail.

A first, and less ambitious, expedition took place between 1875 and 1877, and covered a distance of 1870 km on a budget of 18000 Spanish Pts. provided by the Basque Society from Vitoria, *La Exploradora*, founded by Iradier himself, along with a number of colleagues. While on the expedition, his daughter Isabela died of malaria, and his wife had to be repatriated. The importance of this expedition was only acknowledged years later; however, by the time the Spanish Association for the Exploration of Africa commissioned him in 1883 to carry out his second expedition, split up into three stages

(1884-1886), in the company of Amado Ossorio and Juan Montes de Oca with the purpose of securing the so-called Land of the River Muni, Germany, England and France had already occupied almost the entire extent of the Gulf of Guinea. Despite this, Iradier on his return in 1885 secured the annexation of 14000 km² by issuing Spanish citizenship to its inhabitants. This area grew to 50000 km² when Amado Ossorio returned in January 1886.

The expedition of José Valero y Berenguer, in the company of Emilio Bonelli (1890-1891), attempted to establish points of commerce in the region and favour relations with the indigenous population. They explored the river Naño and subsidiary affluents of the river Benito, and precisely defined the tribes in the region, establishing that the Pamues observed by Iradier in the interior on his 1875 expedition had by that time become established at the very base of the river Muni.

The Berlin Treaty of February 1885, in which Africa was divided up among the European colonial powers, acknowledged a total of 300000 km² under the control of Spain. Iradier foresaw a political debacle, however. On August 31, 1887, he wrote: «...I have remained silent until now, for I believed it to be best that way while Colonial affairs were being addressed at the Berlin Conference, and while the Spanish-French Commission came to a fair and just agreement... Today the circumstances have changed: rumor has it that the limits Commission is to be dissolved in view of the fact that practically nothing is being done... I have not said all that I know, and I hope that time does not force me to do so, for I trust that France, a friendly nation in Europe, also wishes to remain so in Africa. I believe that France will understand and acknowledge our rights, for I am convinced that if this does not happen... the Government will act vigorously and, in sum, Spain cannot accept, has not accepted and will not accept that its rich African territories be dismembered. These are territories that I have in part discovered and explored, studied, and acquired for my country, territories that I will defend whenever necessary and under all circumstances, as a last duty to which I am obliged».

The Paris Treaty of 1900 ceded the entire region of the Gulf of Guinea to France (along with large portions of North Africa); Spain was left with only 26000 km² (Fig. 1). In 1911, Iradier died in Balsaín (Segovia), frustrated by Spanish foreign policy in Africa.

Equatorial Guinea became the equivalent of two Spanish Provinces in 1959, Río Muni and Fernando Póo, with six representatives in the Spanish Cortes, until it was granted Autonomous status in 1963. On October 12, 1968 it became an independent Republic, with Malabo as the administrative capital. The island is divided into two provinces, North Bioko (centered on Malabo), and South Bioko (centered on Luba). The continental region, or Río Muni, consists of the provinces of the Coastal zone (centered on Bata), Center-South (centered on Evinayong), Kie Ntem (centered on Ebebiyin) and Wele

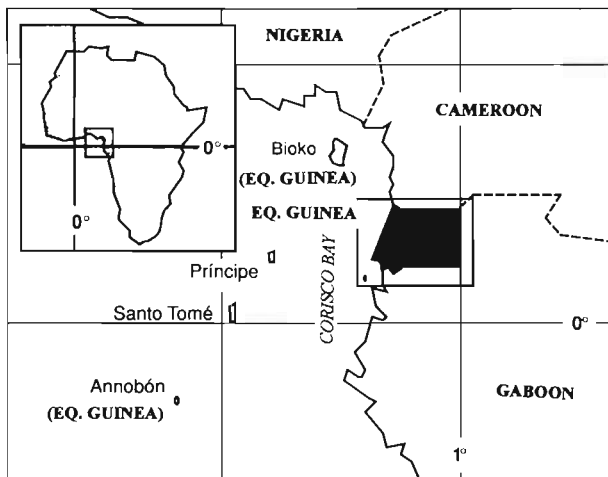


Fig. 1.— Geographical location of Equatorial Guinea.

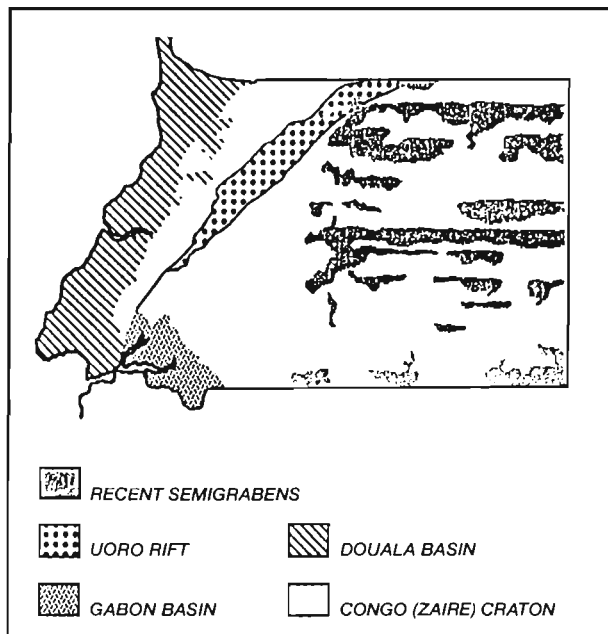


Fig. 2.— Geological map of Río Muni, Equatorial Guinea (after MARTINEZ-TORRES & RIAZA, 1996).

Nzas (centered on Mongomo) (Fig. 3). Lastly, the province of Annobón is administratively centered on Palé.

SPANISH HEALTH CARE PRESENCE

The late XIX Century European trend of founding Institutes of Tropical Medicine (the first being the Liverpool School of Tropical Medicine in 1898), reached Spain after a twenty-year delay, with the founding of the Instituto de Seroterapia Alfonso XIII, directed by Don

Santiago Ramón y Cajal. The salient figure of Spanish medical Parasitology, Dr. Pittaluga, was his successor as Director, and promoted a series of studies in tropical medicine in Equatorial Guinea. A number of expeditions were organized, and the country was equipped with dispensaries and a network of centers for the diagnosis and treatment of trypanosomiasis. The journal *Medicina de los Países Cálidos* published advances in Parasitology and in other medical disciplines in the colonies, along with periodic reports on the main endemic diseases in Equatorial Guinea. In the forties hospitals were built in Luba and Bata which, for two decades, constituted examples for many African nations in terms of their functional design and quality.

Shortly after independence in 1968, diplomatic relations between Spain and Equatorial Guinea were broken, and the African nation soon suffered severe deterioration in its health care resources. In 1979, with the change in regime, relations between the two countries were again established, and have remained so to date. The first period of Spanish cooperation with Equatorial Guinea began that same year, and attempted to cushion the effects of 11 years of dictatorship upon the social and economical structure of the country. Spain responded generously and quickly to the urgent requests made by the President of the Republic. However, the activities of that period basically addressed the emergency situation of the country and provided support for the first steps towards national reconstruction, contributing a spirit of renovation in practically all aspects of Guinean public affairs. In this context, substitutive Health Care Cooperation was implemented with the purpose of covering local necessities, filling those gaps that could not be adequately resolved by the local authorities.

The I Cooperative Plan between the Kingdom of Spain and the Republic of Equatorial Guinea (approved by the III Mixed Commission), entered into practice in the period 1986-1989, and laid down the bases for an integrated cooperation programme, the priority aims of which were to diffuse language and culture through educational promotion on one hand, and health care aid on the other. A series of projects selected for their efficiency and effectiveness completed the design of the I Cooperative Plan. Likewise, a process was initiated to transform the substitutive support that had characterized the preceding period (i.e., 1979-1985) into a model destined to potentiate the autochthonous capacities of the country, by means of personnel capacitation programmes in all areas of collaboration. Moreover, this Cooperative Plan attempted to harmonize its programmes with those conducted by other international organizations or other countries. The I Cooperative Plan reflects the voluntary and spontaneous efforts made by a body of cooperating physicians who carry out their work under extremely hard and difficult conditions. In terms of health care, the Plan consists of 6 programs that are in turn divided into subprograms and specific projects, among which the following may be pointed out: measures against trypano-

somiasis, tuberculosis, onchocercosis, the formation of primary health agents, support of hospitals in Malabo and Bata, support of the implantation of public health care reference laboratories in both Malabo and Bata, research into endemic diseases, etc.

The II Cooperative Plan was approved by the VII Mixed Commission in 1990 for the period 1990-1993. In health care affairs, continuity of the first Plan was decided: improvements being introduced in terms of management, and promoting vertical programmes for the control of epidemics. From the laboratory in Bata efforts were coordinated in the programmes against trypanosomiasis and tuberculosis, with the added coverage of schistosomiasis and paragonimiasis. The laboratory in Malabo in turn coordinated efforts against malaria, amebiasis, onchocercosis, other forms of filariases, and acquired immunodeficiency syndrome (AIDS). The results of these efforts are in turn reflected in numerous publications and scientific meetings and congresses, including the World Health Organization forums, where a number of the Spanish responsible members are acknowledged on the Expert Committees.

A new turn took place in 1993, with cooperation becoming the responsibility of non-government organizations (NGOs) and official health care or scientific institutions, though the Spanish Agency for International Cooperation (Agencia Española de Cooperación Internacional - A.E.C.I.) continues to finance the effort. Thus, the C.I.D.O.B. Foundation takes charge of the laboratory in Bata with the programmes to combat trypanosomiasis, schistosomiasis, paragonimiasis and tuberculosis. In turn, the University of Barcelona manages the programmes pertaining to onchocercosis and other forms of filariases, and the Instituto de Salud Carlos III (Madrid) is in charge of malaria, amebiasis and AIDS.

PHYSICAL GEOGRAPHY

Equatorial Guinea is a small country located on the west coast of central Africa, in the Gulf of Guinea, between 1° - 3° 47' N and 5° 30' - 11° 30' E. Its overall area of 28068 km² is divided into an insular and a continental part. The islands of Bioko (in the Gulf of Guinea), Annobón (south of the Republic of Sao Tomé and Príncipe) and some smaller islands closer to the coast (namely the Corisco, Elobey Grande and Elobey Chico Islands) represent the insular part, with an overall area of 2051 km². The continental mainland, called Río Muni, situated between Cameroon and Gabon, contributes 26017 km² to the total area of the country. There are 7 provinces with 21 administrative areas.

Bioko (3° 43' N, 8° 43' E), with 2017 km², lies 30 km to the west of the Cameroon Coast, with 60000 inhabitants; Malabo is the main town on the island and capital of the nation, with a total of 35000 inhabitants. Annobón, placed in the southern hemisphere, lies 670 km South of Bioko, with 2100 inhabitants. There is only one

ship to get there each 12-18 months. The mainland region has 320000 inhabitants. Bata (1° 51' N, 9° 41' E) is the capital of the mainland region. A total of 400 km separate both Bioko and Río Muni.

Río Muni

From the geological perspective, continental Equatorial Guinea lies in the Congo (Zaire) Craton, on the Atlantic passive margin, between the Douala and Gabon Basins (Fig. 2). Its morphology is characteristic of the African Atlantic littoral, with a low-lying coastal zone some 20 km wide to the North and 50 km wide to the South. The raised inland pleniain consists of magmatic and metamorphic rocks that comprise three-quarters of the extent of Río Muni. The first consists of meso-cenozoic and recent materials, while the second presents archaic granodioritic rocks and granites, with a tectonic escarpment separating the two. The granitic zone is an extensive periplain of two levels: one about 700 m in the more eastern regions, and another occupying practically the entire extent, with a mean altitude of 400-500 m, over which lie numerous cupular hills with slow-flowing rivers in between. The tectonic escarpment is more marked towards the South, with peaks of up to 1500 m; here the rivers from the periplain are enclosed and sometimes flow rapidly, with occasional rapids and falls. From here they brusquely drop towards the southern littoral region. Once in the coastal zone, river flow is again enclosed due to an immersion movement that, in view of the orographic features commented above, is more marked towards the South. The magmatic and metamorphic materials were generated in the Precambrian period over several magmatic cycles, while the littoral materials consist of sands, loam, shale loam and limestone from the Cretaceous to the South, and from the Tertiary period in the North.

River flow is abundant and pluvial in origin; as a result, river levels fall in the dry season. The continental region possesses three large rivers: the Ntem (Río Campo), separating Equatorial Guinea from Cameroon; the Uoro river, which crosses the country from East to West and is known as Río Benito along its western half; and the Muni river, which borders on Gabon (Fig. 3).

In the continental territory the climate is tropical in extreme (rain/sun), with a marked chemical decay of the rock structures. This process is more intense in the flat regions, where water accumulates, thereby releasing large amounts of iron oxides, aluminum, titanium and manganese, that stain the soil a typical red colour: this is the laterite that characterizes these tropical regions. This fine layer of decayed material, a mere 10 m thick in places, supports primary rain forest. Due to the rapid decomposition of organic materials and the exposure produced by intense rainfall, the soils are acid and poor in nutritive mineral substances. In Africa there are two main regions of rain forest: one corresponding to the central-western region of the continent, spanning the lower Niger zone to

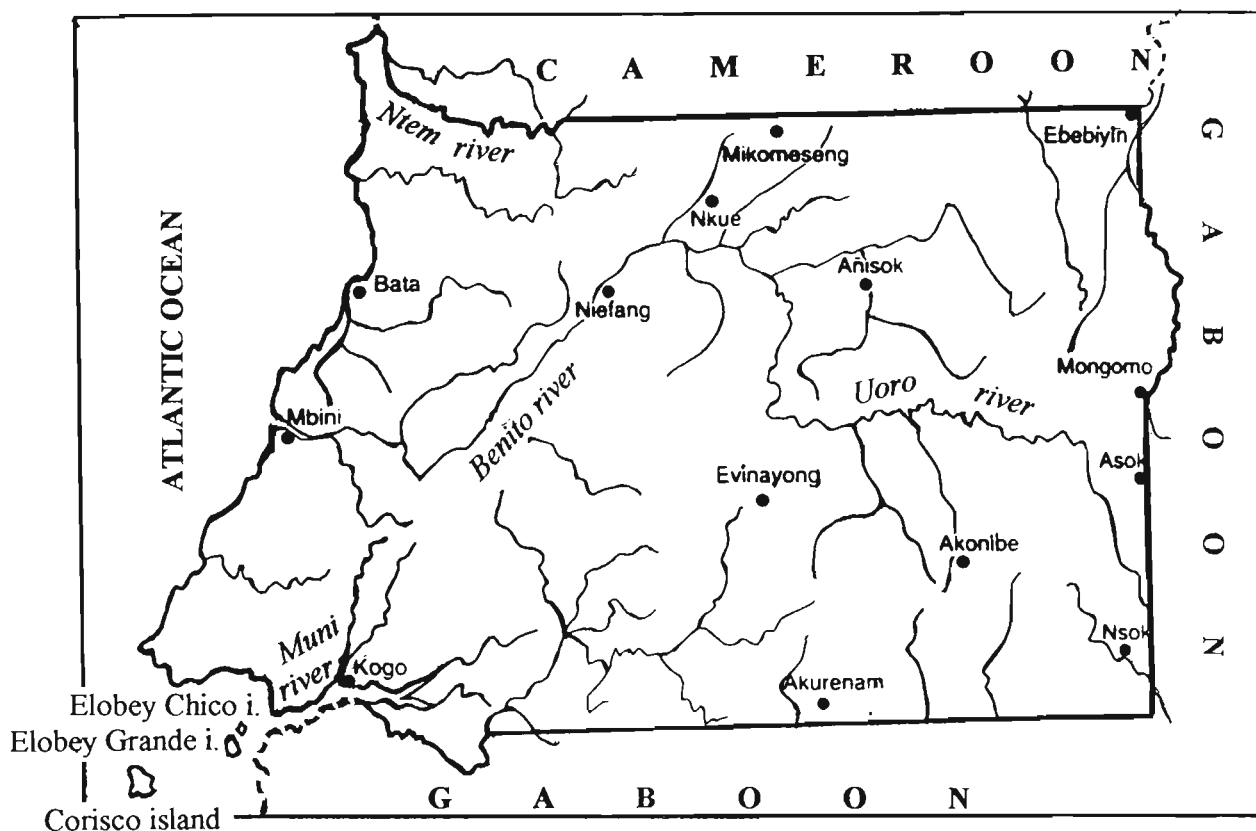


Fig. 3. Main localities and rivers of Río Muni, Equatorial Guinea. Scale 1:1600000.

the Congo River Basin (including Equatorial Guinea), and a second region extending from southern Ghana to Sierra Leone. These tropical forests are characterized by constant high temperatures, with abundant precipitation (1500-7000 mm yearly) and high humidity levels.

Bioko

The island pertains to a large volcanic fracture zone originating to the South of Lake Chad and extending to Mount Cameroon (4079 m) on the continent: the zone is in turn continuous with a series of islands: Bioko, Príncipe, Santo Tomé, Annobón and Saint Helena, the latter lying further to the southwest. The volcanic eruptions that created these islands occurred in the lower Tertiary period, about 60 million years ago. However, even in recent times small eruptions have been recorded, such as in 1922 in the Uba river, or in 1959 with the East Basakato fumarole, both on the island of Bioko. This island consists of two large massifs (Fig. 4). To the North rises Basilé peak (3012 m), the highest lying point on the island, separated from a series of volcanoes further South by the Musola depression. The southern volcanic massif is in turn divided into two main volcanoes: Moka (2009 m), with Lake Biao within the crater, and Luba, separated by

the Belebú rise, known as the Great Caldera of Bonyoma (2261 m), with a crater 5 km across and about 900 m in depth. The mountains found throughout the island in turn define about one hundred short-running rivers possessing a radial distribution along the perimeter of the entire island. Torrential courses and beautiful falls, such as the 300-meter drop on the Iladyi river, are of special note. Torrential flow is more accentuated on the southern half of the island, with milder equivalents to the North. In general, the coast of Bioko is rocky, with small coves, and near-lying islets are numerous.

The insular mother rock is basaltic in origin. Due to the more pronounced slopes, erosion is much more intense than on the continent, the rock being laid bare. In contrast, meteorization is caused by the warm and humid atmosphere, and by running water flows; as a result, erosion crevices, gullies and rock slides are common. In the low-lying coastal zones the soil is alluvial in origin and poor, while the higher-lying areas are characterized by basalt decay, with abundant colloidal elements that allow the retention of nutritive mineral substances. These are near-neutral in terms of pH, and the humus layer is denser towards the peaks, since the corresponding drop in temperature favours slower decomposition. These soils are therefore more fertile than along the coast.

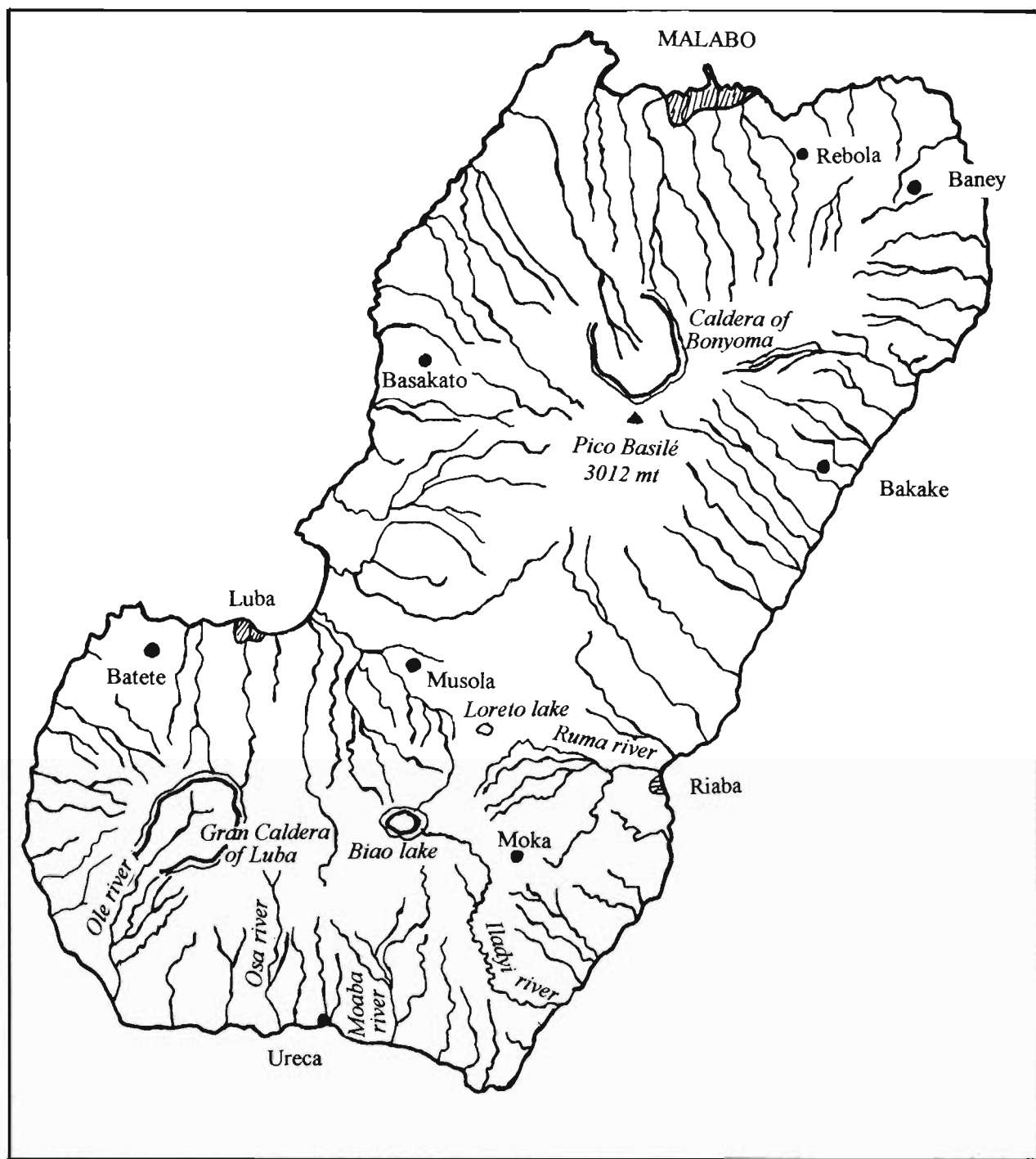


Fig. 4.- Main localities and geographical accidents of Bioko island, Equatorial Guinea. Scale 1:250000.

The orography and vegetation of the island largely determine the presence of highly precise parasitic cycles, which in turn lead to endemic situations of great medical relevance. This observation is the subject of the present monographic volume of the journal.

CLIMATE AND RAINFALL

The climate in both principal regions is typically equatorial, with percentages of relative humidity oscillating between 70% and 100%. The average temperature is

about 25° C, with variations between 17° C and 21° C for the minimum and 29° C and 33° C for the maximum temperatures, depending on location and season.

On Bioko island there are only 2 seasons: the rainy and the dry. The first begins in May and ends in November and the latter consequently begins in November and ends in May. On the continental mainland there are 4 seasons, with one dry, from December till the middle of March, one wet (July, August and the first 2 weeks of September) and 2 rainy seasons, one from March to June and the other from September to December (CAPUZ BONILLA, 1961). The annual rainfall reaches an average quantity of 2120 mm in 123 rainy days on the islands, which is nearly the same as on the continental mainland (2074 mm in 118 rainy days).

REFERENCES

- CAPUZ BONILLA (R.), 1961.— *Guía meteorológica de las provincias de Guinea*. Instituto de Estudios Africanos, Madrid, 84 pp.
- GIRAUD (V.), 1888.— *Africa pintoresca. Región de los grandes lagos. El Congo, exploraciones realizadas en el Oeste de Africa por Soborgnan de Brazza*. Montaner y Simón Editores, Barcelona, 355 pp.
- IRADIER (M.), 1994.— *Africa, viajes y trabajos de la Asociación Eúskara La Exploradora*. Biblioteca de Viajeros Hispánicos, Miragunao Ediciones y Ediciones Polifemo, Madrid, 768 pp.
- MARTIN DEL MOLINO (A.), 1994.— *La ciudad de Clarence*. Ed. Instituto de Cooperación para el Desarrollo, Madrid, 250 pp.
- MARTINEZ-TORRES (L.M.) & RIAZA (A.), 1996.— *Mapa geológico de Guinea Ecuatorial continental*. Ed. Asociación Africanista Manuel Iradier, AEIC-ICMAMPD, 24 pp.
- MORENO MEDINA (M.D.), 1990.— *El bosque de Guinea Ecuatorial*. Ed. Centro Cultural Hispano-Guineano Ediciones, Malabo, 213 pp.
- PERROIS (L.) & SIERRA (M.), 1990.— *Art of Equatorial Guinea, the Fang tribes*. Fundación Folch and Ediciones Polígrafa, Rizzoli International Publications Inc., New York, 177 pp.
- STANLEY (E.M.), 1887.— *El Congo y la creación del estado independiente de este nombre*. Espasa y Compañía Editores, Barcelona, 888 pp.