

**Impact of Travels on Scientific Knowledge  
The Scientific and Political Results of the Second Bottego  
Expedition and the National and International Context of  
Italian Explorations in the Horn of Africa**

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In order to understand the colonial policies of Italy during the second half of the 19th century, we must first consider the general international and national circumstances within which our efforts developed.

Prior to the opening of the Suez Canal in 1869, the international situation can be summarised as follows: England and France had been busy since the beginning of the 17th century with a policy of development of overseas colonies. In England, Parliament, which initially resisted too many colonial commitments, often and vainly tried to inhibit the development of new colonies. However, trading companies, well supplied with capital, consistently tried to expand and to monopolise the trade with as many countries as possible by the system of “Chartered Companies”. Thus, the British had already managed to establish nearly complete control over India when the government authority exercised by the East India Company was replaced by direct rule by the British Crown as a consequence of the “Great Mutiny.” (This was the mutiny of the bulk of the Army of Bengal, while the armies of the Bombay and Madras presidencies remained loyal and Sikh troops made up a large proportion of those used in crushing the revolt).

France had repeatedly tried to follow the British pattern both in India and in America, and an almost uninterrupted series of minor and major wars ensued between the two. The French Companies, however, which were financially weaker, had been forced to depend on the direct commitment of their government much more than their British counterparts. The Dutch were similarly committed, but, as their main interests were in Indonesia, their occasional conflicts with the British were basically a by-product of European crises.

Up to the end of the 18th century, such European settlements in Africa as existed were primarily naval facilities for the supply and refitting of the ships sailing to the Indian Ocean. Obviously they were also trading stations, which tried to balance their overall budget with local trade. And the slave trade, profitable as it was, did not involve the European powers in an African colonial policy: Local chiefs were only too glad to raid their neighbours to supply slaves to be shipped across the Atlantic.

Spain and Portugal were both economically and politically weak, and their only aim was just to secure such bases as they had acquired in the past. Portugal’s policy was that of a strong alliance with England, while Spain, which had no commitments in the Indian Ocean, just stuck by the sea-ports that could be useful for her links with her few residual American colonies. Almost all of these had been lost by the middle of the 19th century. Indeed, it could be argued that Spain was able to keep her African possession simply because no one else wanted them.

The other European powers had different problems: Russia had no access to the great sea routes and thus had engaged in a systematic policy of colonisation of Asia. The Austrian Empire was just dragging along and saw her main interests and dangers in the Balkan area. Finally, two “new” nations entered upon the international stage: Germany and Italy.

Germany was economically strong and politically expansionist. However, her leader Otto von Bismarck, though well aware of the need to manage public opinion, which was strongly in favour of political expansion both at home and overseas, was himself sceptical of the practical utility of colonies.

As for Italy, by 1870 she had just almost completed her unification by the annexation of Rome and the last remnants of the Papal States, so that only Trento, Istria and a few towns of Dalmatia remained as ethnically significant Italian territories still under Austrian rule. However, Italy was economically weak and was plagued by a demographic explosion such that during the last decade of the 19th century and the first years of the 20th an average of 250.000 people emigrated annually, mainly to the Americas.

A significant factor in the development of the Italian interests in East Africa was that of the emergence of Italy on the international stage as a unified country at about the same time as the opening of the Suez Canal (1869). The proclamation of the Italian Kingdom was issued in 1860. Southern Italy was annexed in 1860, Venice and its territories in 1866, and Rome in 1870. Indeed, the earlier Italian States had not overlooked the significance of trade with Africa and the East. But Lombardo-Veneto, under Austrian rule, was bound to the Hapsburg policies, which were entirely aimed at the Balkan area, and were indifferent to overseas problems, as it is shown by the continuous decay of Venetian traffic throughout the period of Austrian domination. The resources of the other states were too small for any political activity beyond the boundaries of the Mediterranean Sea.

Thus, as we have said, the maritime powers had established a network of commercial stations along the coasts of Africa, which stretched not only all along the west coast of Africa, as well as along the east coast from The Cape north to Mombasa. These were either direct dependencies or ruled by Chartered Companies. Mombasa itself was nominally dependent on the Sultan of Zanzibar and was the northernmost natural port for traffic with India. Italy, instead, had nothing and, thus, had to make an entirely new start.

A peculiar trait of Italian colonialism was the breach between the new kingdom and the Holy See. Thus, apart from a couple of proposals by Cardinal Massaia and by Father Sapeto, Italy lacked that continuous impulse, which was especially active in England, from missionary societies prompting exploration and political penetration in Africa. At the same time, for both ideological and economical reasons, both Socialists (though, at the time, they had little political influence) and many conservatives opposed colonialism as a waste of precious resources, which they judged should be spent on social investments. However, at the same time, and to a much greater extent than in other countries, colonialists were advocating the possibility of settling our surplus population in the new colonies, thereby limiting outright emigration to foreign countries.

The situation changed abruptly when the Suez Canal became operational because it changed completely the map of the trade routes, and it clearly showed that Italy needed her own supply and refit stations along the new route. However, the Egyptians moved first in an abortive attempt to build an enormous empire. They occupied and garrisoned Massawa, Tajura, Zeila, Berbera and Harrar and even sent a naval expedition along the Somali coast. An Egyptian ship tried to sail up the Juba and troops were landed at Brava and Kismayu, which were dependencies of the Sultan of Zanzibar. However, the Mahdist revolt in Sudan forced the Egyptian government to evacuate all these localities in 1879, abandoning them to European occupation. Thus, while the enormous budg-

etary difficulties of the new kingdom made the Italian governments of the time rather reluctant to undertake important commitments in Africa, there were other considerations that they could not avoid.

While the British established their re-coaling and refitting station in Aden, at the southeastern tip of the Arabian Peninsula, and were taking over Berbera on the opposite, African, shore of the Gulf of Aden, the French had already occupied Djubuti. Consequently, the only natural sea-ports still available along the Eastern Route were at Massawa and Assab, which thus became the natural bases for both the scientific and political Italian penetration in East Africa. Therefore, the Italian shipping company "Compagnia Rubattino" established a presence in Assab in 1869, just when Suez Canal was opened.

However, the Italian Government only became actively interested in East Africa toward the end of 1884, at which time it took the first steps towards acquiring control of the Somali coast (1885). It did so under pressure from the British I.B.E.A. Company, the chartered company operating in Kenya, and from the British Government, both of whom were worried by the German and French activities. Thus was chartered the "Filonardi Company" and, by the good offices of the British, the Sultan of Zanzibar granted it the administration of the Benadir, actually the five settlements of Brawa, Merka, Jazira, Mogadishu and Warsheik, and shortly afterward this acquisition was complemented by the occupation of Adale. Protection treaties were later signed with the sultans of Hobyo and of the Midjertains. Meanwhile the Berlin treaties of 1895 had arranged the rules by which the European powers were to establish their future claims in Africa, this in order to avoid clashes that might engender complications in Europe. Finally, a treaty of 1891 between Great Britain and Italy established the boundaries between the future "zones of influence" of Great Britain and Italy in East Africa.

If we now consider the subsequent explorations in these territories by various explorers, we may well see how they closely fitted into the general political pattern: Geographical and scientific exploration had to ascertain the conditions and resources of the countries as a prerequisite to possible annexation.

In 1843 the Englishman Christopher landed in Brava, Merka and Mogadishu and soon moved inland to the Shebelle. As a result of these travels, he was able to disprove the Arab legend that the Shebelle flowed into the Indian Ocean close to Mogadishu. This rather forlorn enterprise had no immediate consequences. However, in 1878, just when the Egyptians were abandoning their plans in East Africa, the Frenchman Revoil explored the coast of the Gulf of Aden between Bosaso and Guardafui and moved inland up to the Darror valley, with notable scientific results. Revoil returned to Somalia in 1882/83, stayed in Mogadishu, Merka, and Brava, and landed in the Bajuni Islands, again with excellent scientific results. However, Revoil was unable to advance inland much beyond Afgoye on the Shebelle just as it had happened in the previous attempts by Christopher, by the Frenchman Guillain, and by the German Kinselbach, who had been murdered in Golwein while he was trying to determine what had happened to Baron von der Decken, who in 1865 had tried to explore the Juba with two small steamboats and had been murdered in Bardera.

Meanwhile the British (and not only they) were penetrating inland from the North. Thus, Burton, in 1854, reached Harrar, Speke visited the Nughal plains, and the Austrian von Heuglin, after 13 years of exploration, finally left Africa from Guardafui. Again, between 1885 and 1890, the James brothers reached the Shebelle from the North.

The Italians, indeed, appear only in 1890, after the Berlin treaty had been signed and when the British-Italian treaty of 1891 acknowledged Eritrea, Somalia and Ethiopia as an Italian "zone of influence". In 1890, Robecchi Bricchetti explored the coastal zone between Meregh and Alula, Baudi di Vesme, leaving from Berbera, explored the Nughal plains and Burao, and in 1891

Robecchi Bricchetti moved again from Hobyo to the Shebelle and thence to Berbera, thus meeting with Ruspoli, who was moving in the opposite direction, and Baudi di Vesme, who was again in the Nughal. In 1892 and 1893, Ruspoli was on the move, traveling from Brawa towards the upper Juba, where he died. Meanwhile Bottego and Grixoni, came south from Berbera, finally reaching Brava. Indeed, as we shall see, after the 1893 war between Italy and Ethiopia, explorations within territories under Ethiopian influence were typically done only by British and French explorers and by the American Donaldson Smith, while the territories under Italian influence were studied only by Italians.

Indeed, if we consider the Italian background, after 1870, in parallel with the growing interest of the Italian government for African affairs, the Società Geografica, the Società per l'esplorazione geografica e commerciale dell'Africa (= Society for the geographical and commercial exploration of Africa) and the Società Italiana per l'Africa, like similar organisations in the other European countries, made an all out effort to develop African exploration and were able to promote no less than 70 expeditions in Africa. An important factor in this surge of interest for Africa was the extraordinary sanguine assessment of the economical assets of the Horn of Africa made by influential people, most notably by Antonio Cecchi.

We have said that the Berlin treaty of 1885 had stipulated the rules by which the game of colonising Africa had to be played, while the British-Italian treaty was its implementation as far as the Horn of Africa was concerned. However, the European diplomats had completely overlooked the internal situation in Ethiopia. There the usurpation by the self-appointed Negus Theodore had been crushed when he was killed in 1865 while fighting a British relief expedition dispatched to free an assemblage of Europeans whom Theodore had captured and imprisoned in Magdala. Theodore was followed by Negus Johannes who undertook to reorganise the Empire of the Amharas. When Johannes died battling the dervishes of the Mahdi, his relative Menelik, Ras of Shoa, moved quickly and craftily to become not only the Negus Negesti but to re-establish the Ethiopian authority on such lands which had been occupied by Gallas and Somalis during the past centuries. Menelik was quite willing to receive the commercial and technical co-operation of Europeans, Italians included, but he was equally adamant to avoid becoming a vassal of any European power. Thus, quite soon gangs of Ethiopians, large and small, began raiding the lands which Menelik aimed at conquering. At this stage, although the Ethiopians were quite effective in spreading terror, they were not yet aimed at conquest — this came later.

We may now turn more specifically to the second expedition led by Bottego. Although his first expedition in 1892 had basically a geographical purpose, though he collected some relevant zoological, botanical and geological materials, these were rather a sort of bonus; his second expedition was much more ambitious. Indeed, the purpose of the expedition was definitely that of opening the whole of the Juba-Omo valleys to the economic and political influence of the Italians. It likewise had a much more comprehensive scientific purpose.

Bottego, Citerni and Vannutelli were army officers and competent topographers, but it was necessary to add a competent naturalist to the expedition. Maurizio Sacchi was asked to join. Sacchi had graduated in Natural History and was an assistant in the Service for Metereology and Geodynamics; but he also had a solid, broadbased scientific background. Moreover, he had published some interesting geographical papers, among them one on the Omo (Fig. 1) (though his conclusions in that paper later proved to be in error). It is probable that Sacchi and Bottego were already acquainted inasmuch as both were members of the same Masonic lodge, the Rienzi of Rome (Fig. 2). Sacchi's personal papers, now in the family archive of one of us (AS), show that Sacchi prepared himself quite thoroughly for his job. In fact, the geological, zoological and palaeontological collections of the expedition were almost entirely his work, with, obviously, the

*Estratto dal* BOLLETTINO DELLA SOCIETÀ GEOGRAFICA ITALIANA  
Novembre e Dicembre 1894.

## I FIUMI OMO E BARO SECONDO UNA CARTA ABISSINA

*Nota del socio* MAURIZIO SACCHI

(con un fac-simile).

Intorno alla *Carta geografica disegnata da un Abissino* riprodotta in appendice al primo volume della importante opera del capitano Antonio Cecchi: *Da Zeila alle frontiere del Caffa* (1), il Cecchi dice: « La-  
« scio ai Cartografi e Geografi il lavoro di identificare tutti i nomi e  
« riconoscerne le posizioni sulle Carte di quella regione pubblicate da  
« Europei. »

L'illustrare questa Carta, forse unico monumento di cartografia abissina, è invero cosa di grandissimo interesse, poichè essa contiene la soluzione quasi completa del tanto discusso problema del corso del Fiume Omo; ed il lavoro di riscontrare i luoghi sopra Carte europee è per noi assai facilitato dalla traduzione in caratteri latini che il Cardinal Massaja fece di 82 nomi scritti in amarico sull'originale.

La Carta rappresenta il territorio compreso tra le montagne del Gimma Rare e il Gudrù al N., e le frontiere meridionali del Caffa e dei piccoli regni da questo dipendenti al S.; giunge a levante fino alle terre dei Galla Botor e al regno di Ualammo, ed a ponente fino alle terre degli Sciancallà e al regno di Guma. Comprende così tutto il bacino del Ghibiè di Lagamara, il Guma, il Limmu o Ennaria, il Gomma, il Ghera, il Gimma Abbagifar, il Garo e il Caffa coi regni dipendenti di Cullo e di Cobbo o Contà. I nomi che si trovano sulla Carta sono di paesi e fiumi; non vi sono indicate nè città nè montagne; e i soli se-

(1) CECCHI A.: *Da Zeila alle frontiere del Caffa*. Roma, Società Geografica Italiana 1886. Vol. I, tavola IV.

FIGURE 1. Opening page of Sacchi's paper on the Omo problem.



occasional help of the other members of the expedition.

All the surviving documents — letters by Bottego, by the president of the Geographical Society, Marquis Doria, of the various governmental services which supplied money, equipment, weapons, ammunition and logistic support, as well as the accounts by Cecchi, Citerni and the surviving papers of Sacchi — stress that the main purpose of the expedition was to establish a commercial station in Lugh and thence spread the Italian political influence throughout the whole of present Galla and Sidama so that all the trade and resources of the region would be channelled through Lugh. There were even hopes to attract caravans from the West, an area that, by treaty, was within the British sphere of influence. Cecchi, who was killed in 1896 in Lafole by Somalis at the instigation of Arab merchants of Mogadishu whom he had antagonised by his high handed behaviour, was so sanguine in one of his memoranda as to compare the economic potentials of Lugh with those of the ancient Timbuktu, the main caravan centre of Western Africa!

As we shall see, the expedition also made important zoological collections, but, as shown by Sacchi's letters, the main purpose of the expedition was for geology and mineral resources and a memorandum by Sacchi proves that he was especially charged to identify possible gold and iron mines.

We think it useful here to provide some evidence as to the personalities involved, for it appears from the surviving letters and memoranda by Sacchi (Figs. 3–5) that during the preparation for the expedition there was a clash between him and Bottego. This clash is also mentioned by Bonati in his recent biography of Bottego. Bonati (1996) quoted from one of the letters from Sacchi. We have not only a draft of the same letter, but also some further correspondence between Sacchi and the director of the Service where Sacchi was serving.

Bottego, indeed had begun by demanding “Blind and absolute obedience” from Sacchi. Sacchi did agree, conditionally, as he wrote “however, I desire complete freedom as to the ways by which

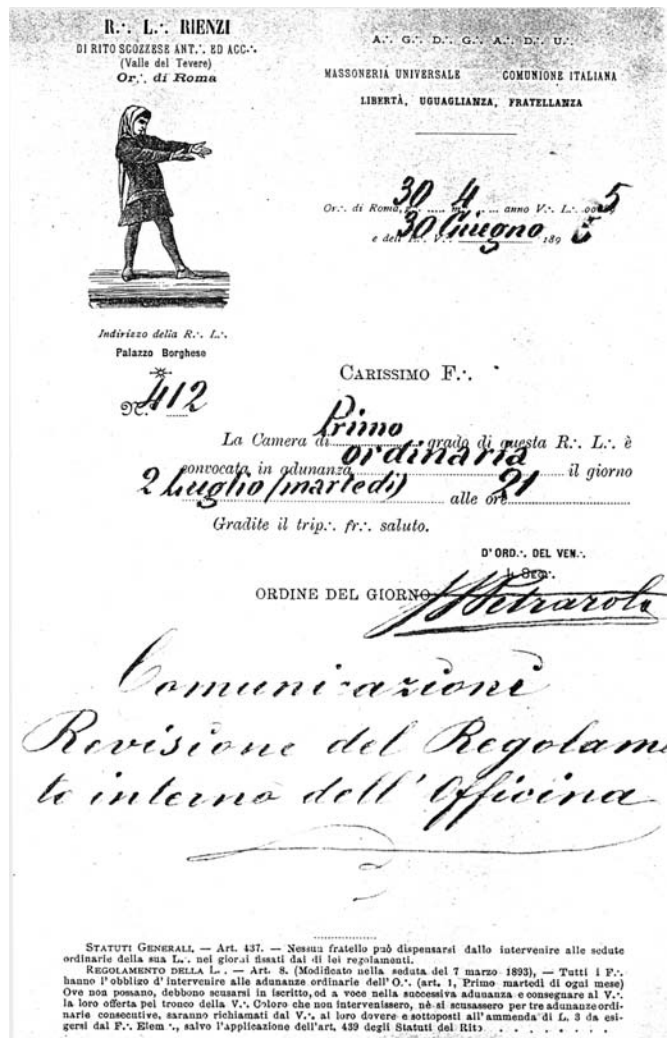


FIGURE 2. Invitation to Sacchi for a Masonic meeting, showing that he was a member of the same lodge as Bottego.

25 maggio 95

Egregio ed. Illustrissimo Sig. Capitano Bottego

Ella mi disse ieri che io le avrei dovuto  
rispondere oggi sulle condizioni che mi proponea  
rispetto alla prima: obbedienza cieca ed assoluta  
sia è accettabile e ragionevole per quanto riguarda  
l'andamento della spedizione; i suoi ordini  
ad andare avanti o indietro o dove vorrà; di com-  
battere o no; di sedare una rivolta colli arabi,  
di partire o di fermarsi etc.; saranno puntual-  
mente eseguiti; solamente vorrò l'libertà  
di ragione sul modo di osservare il territorio e  
studiarlo e descriverlo; sempreché i miei desi-  
deri non siano in contraddizione col successo  
della spedizione o colla scelta che Ella farà dell'  
itinerario.

Quanto alla seconda condizione: silenzio  
assoluto sia con gli arabi che con le popolazioni sopra  
tutti gli altri loro vedute, non la posso accettare.  
Comprendo su quali cose sarà doveroso il silenzio  
per tutti noi, e su queste credo sarà facile po-  
terci accordare prima della partenza e durante  
il viaggio; ma non comprendo per qual

FIGURE 3. Opening of the minute of the latter where Sacchi refused the original conditions set by Bottego for the handling of the expedition's scientific results and which almost brought about the breaking of all contracts between Sacchi and Bottego.

to observe and study the territory, whenever my wishes shall not clash with the progress of the expedition and with the choice that you shall make of the itinerary." Then he continues "As to the second condition: *total silence both in writings and in words on everything that I shall see, to this I cannot agree.* I can understand that there are subjects on which secrecy will be mandatory for everyone of us, and on these I am confident that it will be easy to agree both before leaving and during the voyage; however, I can not understand why I should be silent on everything else; it is obvious that the right to write the account of the expedition is yours as you shall have led it and on that I shall never have any wish to write; but as I plan to travel as a scholar and not as an askari, I claim the liberty to write and tell, after you will have pub-

lished the narrative of the voyage, anything that I may have seen and that I may deem useful for my country. Nor can I can agree to the third condition: viz. To give up to you all my notes before the end of the voyage, as, moreover, it appears that you plan to use them at your discretion. I will hand over all my notes (which will not deal with the events of the voyage, which I shall ignore)

Egregio ed Illustre Sig. Marchese

Dispiacente di non avermi potuto accordare col Capitano Bottego intorno alle proposte che egli mi fece ~~sulle~~ alle quali io ne contrapposi altre, che credo avrebbero potuto essere accettate da qualunque esploratore, Le trasmetto copia della lettera che indirizzai al Capitano Bottego. Le condizioni in essa contenute non furono accettate, come egli ebbe a dichiararmi ieri.

Profondamente obbligato a Lei, e sempre desiderato di servire la Società Geografica a cui ho l'onore di appartenere, mi confermo

Suo Devotissimo  
D. Maurizio Sacchi

FIGURE 4. The minute of the letter by which Sacchi informed the President of the Italian Geographical Society of his break with Bottego.



and all the materials assembled, not to you, but to the Geographical Society, so that they may be available to you, to me and, even better, to a good geologist and mineralogist. I want, indeed that from my efforts may accrue the best profit for science, otherwise I should not think to have made any serious work.”

Bottego, on the spot, turned down these sensible proposals and Sacchi wrote (Figs. 3–4) both to his director, who had advised him against participating in the expedition, and to the President of the Geographical Society, that he renounced the expedition. However, within a couple of days the differences with Bottego were patched up (Fig. 5). Bottego undertook to rewrite his conditions in an acceptable form, and the preparations for the expedition went ahead.

The story of the expedition is well known, and thus we shall not deal with it. However, we cannot see how, when war broke out between Italy and Ethiopia no one thought of at least trying to warn the explorers of the new situation. Indeed, the open war had followed months of occasional, but serious, skirmishes between the Italians and Ras Alula, who, finally, got the all out support of the new Negus Menelik. It should have been obvious that this situation was to engender a growing risk for the explorers.

Anyway, although the expedition ended tragically, the collections assembled between the coast and Lugh reached Italy in perfect order. Even those made between Lugh and the Ethiopian lakes, apart from those made by Sacchi when crossing the Tertale, were almost entirely recovered thanks to the intervention of Menelik. The Negus, as he had made peace with Italy, made a point to honour his pledges and not only secured the freedom of Citeri and Vannutelli but also the recovery of a good deal of the materials and papers, so that these allowed for considerable advances in the knowledge of the geography, geology and natural history of these regions. Not only were a number of zoological and geological specimens recovered, but also most of the notes, the labels and even such personal belongings as the wallet and the diary of Sacchi. However, the last pages of the diary were torn off, possibly in Addis Ababa. As far as the zoological results of the expedition are concerned, the collections were promptly dispatched to different specialists and their study was soon sufficiently advanced as to allow Gestro to provide a first synthesis as an appendix to the volume by Citeri and Vannutelli (1899) where they told the story of the expedition.

Naturally the numbers which we give here after Gestro in order to underline the significance of these collections may require some corrections. Apparently when Gestro published his summary, several of the principal taxa had not yet been completely studied. Moreover, given the equipment of the expedition and its almost continuous marching, practically all the zoological specimens collected were preserved in alcohol; thus, entire orders, such as the Lepidoptera, were not collected.

Anyway, after Gestro's account no one since has attempted a comprehensive assessment of the zoological results of the expedition, which would require a painstaking screening of the literature. Moreover, advances in our understanding of the African fauna have likely led to the synonymizing of some species listed as new by Gestro, while others, which at the time were included in known taxa have been recognised as new. However, it is safe to assume that such corrections cannot much change the overall picture.

It is notable that the Italian and foreign specialists who received the material published over 30 papers in less than one year after receiving the specimens.

Egregio Signor Direttore                      30 maggio

Stavo per scrivere di nuovo onde metterla al corrente di qua ciò che succede dopo averle scritta la prima lettera quando mi giunse la sua del 29. Le esprimo prima di tutto la viva gratitudine che sento per i sentimenti che Ella mi ha espresso, e la commozione che me ho provata. Dovevo dirle che avendo ritrovato il capitano Bottego per la restituzione di un libro che egli mi aveva prestato (l'astronomia nautica del Schaub) ~~ella~~ egli mi diede diversi chiarimenti sulle proposte che io avevo respinte e mi spiegò i motivi per i quali egli le aveva così formulate. Vedemmo così che il disaccordo era più nella forma che nella sostanza. Non stabilimmo nulla per il momento, ma egli mi disse di ritornare da lui l'indomani ~~per~~ ~~tempo~~ e che intanto avrebbe pensato al modo di formulare le sue proposte in modo da esprimere più esattamente le sue intenzioni. ~~Lo mi trovai così fra~~ ~~Lo~~ ~~Lo~~, che da avevo già scritto, mi trovai così per un po' perplesso tra il ~~tentare~~ <sup>temere</sup> di non recare di nuovo dispiacere a lei e ~~quello~~ <sup>il viaggio</sup> che avrei fatto meritato di non avere serie intenzioni circa il viaggio, ~~se la persona~~ <sup>avelli in</sup> ~~firmo delle sue proposte fosse lo a respingere le proposte~~

FIGURE 5. Opening of the minute of Sacchi's letter to the Director of the Central Office of Meteorology, informing him that an agreement had been finally arrived at with Bottego and that he had resolved to join the expedition.

As a whole, Gestro lists 1318 species, subdivided as follows:

Mammals . . . . .	46 (new 1)
Birds . . . . .	7 (new 1)
Reptiles . . . . .	67 (new 3)
Amphibians . . . . .	12 (new 2)
Fishes . . . . .	40 (new 7)
Molluscs . . . . .	7 (new -)
Crustaceans . . . . .	4 (new 1)
Arachnids . . . . .	57 (new ? study not completed)
Myriapods . . . . .	18 (new 15)
Coleoptera . . . . .	605 (new ? study not completed)
Hymenoptera . . . . .	109 (new 18)
Diptera . . . . .	50 (new ?, study not completed)
Hemiptera . . . . .	180 (new ?, study not completed)
Neuroptera . . . . .	1 (new ?, study not completed)
Isoptera . . . . .	2 (new ?, not yet identified)
Odonata . . . . .	1 (new ? not identified)
Dermaptera . . . . .	6 (new ? not identified)
Blattoidea . . . . .	30 (new ? not identified)
Mantoidea . . . . .	30 (new ? materials still incompletely studied)
Fasmids . . . . .	1 (new ? not identified)
Orthoptera . . . . .	43 (new ? only partly studied)
Hirudinea . . . . .	1 (Unidentified)
Total	1318

Turning now to the geological results (Fig. 6), as we have seen, the political and diplomatic purposes of Bottego's mission went hand in hand with a desire to solve a geographical enigma and to make a geological survey. As a result, this was, in all probability, the first 19th-century expedition to the region that had been planned with precisely stated scientific objectives. As we said, as part of the *travaux préparatoires*, Maurizio Sacchi, the naturalist whose main task was the collection of the geological data, even took an *ad hoc* crash course in Rome under Ercole Mattiolo, an eminent geologist at the Royal Geological Office. He was, thus, provided with the background needed to prepare a *prima facie* geological account of his travels and collect a useful selection of rock and fossil samples. The 326 specimens that eventually reached Italy, in fact, were accompanied by an exact description of their provenance and attitude where necessary, as well as a day-by-day report.

The study of the collection was entrusted to Prof. Struver of the University of Rome, who delegated the task to two younger scholars, G. De Angelis D'Ossat and F. Millosevich. The collection consisted of both the specimens recovered after the disastrous conclusion of the expedition and those Sacchi had managed to send to Italy before crossing into Ethiopia.

Except for the Lago Rodolfo (now Lake Turkana) — Lago Stefania (now Lake Tertale) section, which had received some attention from the German geologists operating further to the west in Kenya, Tangyanika and Uganda, the area covered by the expedition had never been geologically explored. The Italian colonisation was recent and only skin-deep, in other words, confined to the coastline. Furthermore, by contrast with what was then British Somaliland to the north, this was a geologically difficult region because, due to low relief, there are few exposures.

The expedition set out from Brava on 12 October 1895. After travelling some 200 km roughly parallel to the course of the Juba River and having crossed the dunes and the coastal plain, it

reached the Pre-Cambrian crystalline basement (now known as the Bur Basement) with the inselbergs (“bur” in Somali) that had impressed Bottego during his first expedition (Bottego 1895). It then continued along this basement for another 150 km, probably passed through the village now called Dinsor and then crossed the Baidoa region, where the basement disappears under the karstified Mesozoic. Sacchi’s observations provided the first indication of the existence of this Pre-Cambrian (“Archaic” in the terms of those days) basement below the transgressive Mesozoic sequence and the key to the geology of Southern Somalia.

The Mesozoic consists of a Jurassic carbonate formation and a (carbonatic) gypsum-bearing formation, now referred to the Cretaceous by Merla et al. (1979) (Fig. 7), cropping out particularly near Lugh, where some arenaceous terms at its base are also visible. The two (ugly) fossils collected by Sacchi from the gypsum-bearing arenaceous level were doubtfully assigned by De Angelis D’Ossat to the Trias. They are, in effect, a mollusc (*Modiola minuta*, Goldf. sp.) and the tooth of a fish (*Colobodus*). This dating, probably influenced by the fact that there are evaporites in the Germanic (then the best known) facies of the Upper Trias, was hesitantly accepted by Stefanini (1933) in the light of his recent fieldwork and again by Dainelli (1943). It was finally corrected by the findings of Azzaroli and Merla in 1959–1960. The establishment of correlations over long distances between virtually horizontal strata is never an easy task and misinterpretations are likely. De Angelis D’Ossat and Millosevich were, in fact, wrong when they placed the gypsum-bearing formation under the Jurassic (subsequently Stefanini’s “Bardera Formation”) instead of above. Sacchi would not have been able to classify the two fossils and his views on this correlation are not known. His notebooks have never been published and one often wonders whether the ideas proposed in De Angelis D’Ossat and Millosevich’s monograph are his or theirs. Merla et al. (1979) point out that Sacchi described the Jurassic as in direct contact with the Crystalline at Salole. This should have led him to the correct interpretation of the “Lugh Series.”

The data collected in Somalia were such as to enable Dainelli (1943) to declare some fifty years later that they must be seen “as the foundation, the starting point of all subsequent understanding of the geology of Somalia”, and that “The pattern of the geological constitution of southern Somalia is still, one may say, that established in the light of Sacchi’s collections”, albeit “amplified and also extended in terms of space instead of being confined to a single itinerary.”

The expedition reached Lugh on 18 November and stayed there for a couple of months, during which time the course of the Ueb (“Uabi Gestro” on the latest maps) was explored. The itinerary, which to this point had taken the expedition to the North, now took it west along the Dawa, which forms the frontier between Ethiopia and Kenya. Once again, as in the Ueb Valley, the route ran along Mesozoic terranes. The specimens collected included fossils subsequently used to construct a stratigraphy of the Mesozoic. A stop at Sancurar also provided the last chance to send the fossil materials to Lugh and thence to Italy.

While Sacchi was busy collecting fossils west of Lugh, a thousand kilometres to the north an Italian army was severely mauled by the Ethiopians at Aduwa (1 March 1896). And, although war had broken out between Italy and Abyssinia, Bottego and his companions knew nothing about these events. Thus, Sacchi continued to gather fossils and the expedition eventually continued on unaware of the dangers ahead. At Salole, the expedition again met up with the crystalline basement, still covered here and there with tongues of Mesozoic limestones and useful Quaternary gravels that feed the wells. Sacchi’s description, quoted by De Angelis D’Ossat and Millosevich, develops this picture quite clearly. It was evidently a misunderstanding by these authors that led them to show on their map an extensive strip of Mesozoic near the village of Dass.

At Ascebo, which was reached on 17 March 1896, the expedition abandoned the Somalian geological setting (Mesozoic covers with limited inliers of the Pre-Cambrian crystalline) and



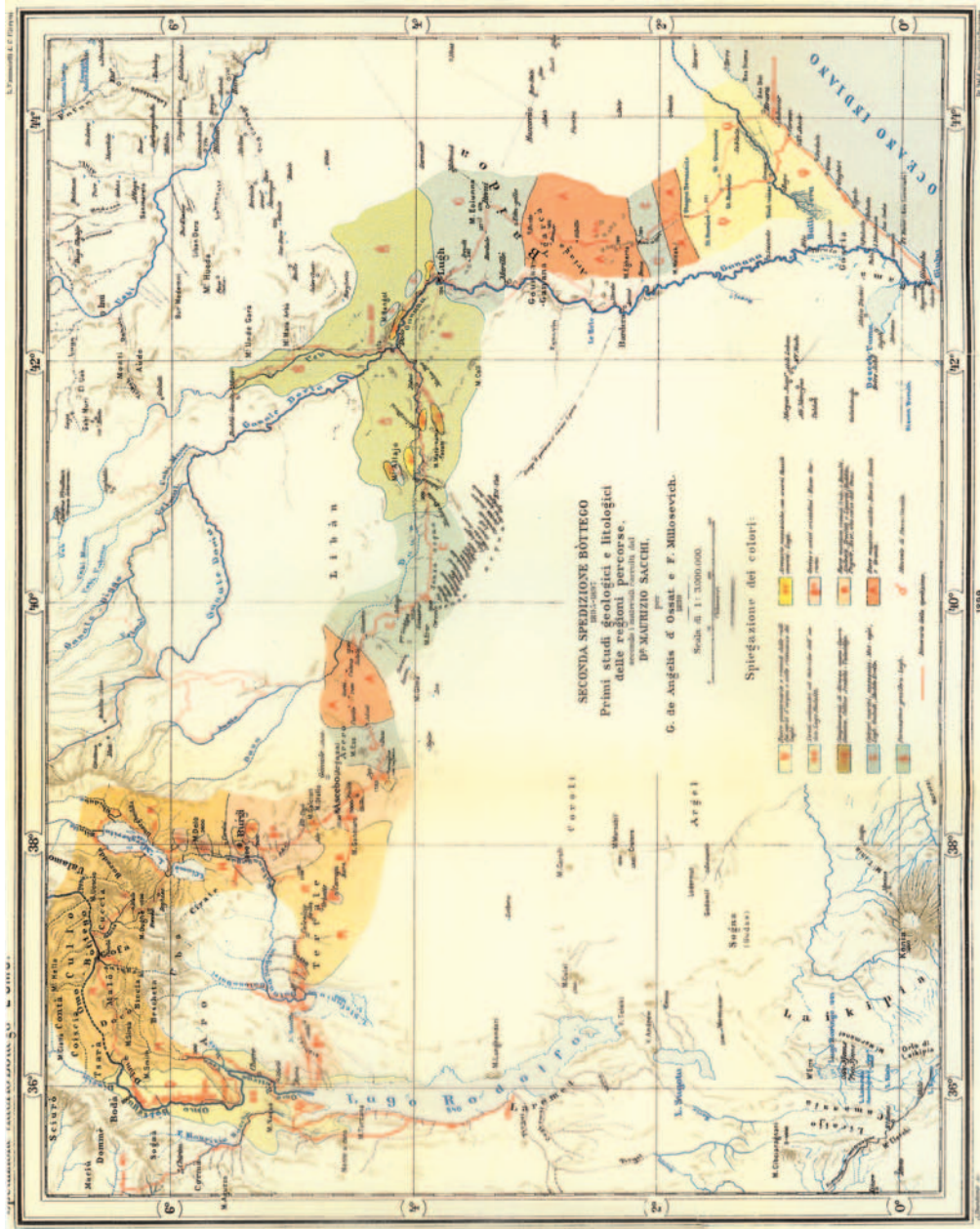


FIGURE 6. The geological map showing the original interpretation of the collections and notes made by Sacchi.

entered the typically Ethiopian landscape composed of Tertiary volcanics resting on a Pre-Cambrian basement that outcrops from some valley floors. The picture is similar to that of the rift valleys.

The final part of the journey was a circuit that the expedition followed counterclockwise from Ascebo to Lake Margherita (now L. Abaya), the Omo River and then Lake Rudolph (now Lake Turkana), where the expedition split into two parties. Bottego, Citerni and Vannutelli headed north. Sacchi completed the circuit and returned to Ascebo (1 December) across the inhospitable and unknown Tertale region. Sacchi then returned to L. Margherita where his party was attacked and he was killed (February 1897). Bottego, too, met a similar fate scarcely one month later.

At the time of the expedition, the region to the east of the Omo and Lake Stefania was geologically unknown. The expedition's data essentially extended here; the geology described more to the west was done by German authors. On balance, the picture that emerged from the Bottego expedition corroborated that described in other parts of East Africa, that of an "Archaic" basement directly overlain by Tertiary lavas produced by the volcanic activity associated with the formation of the

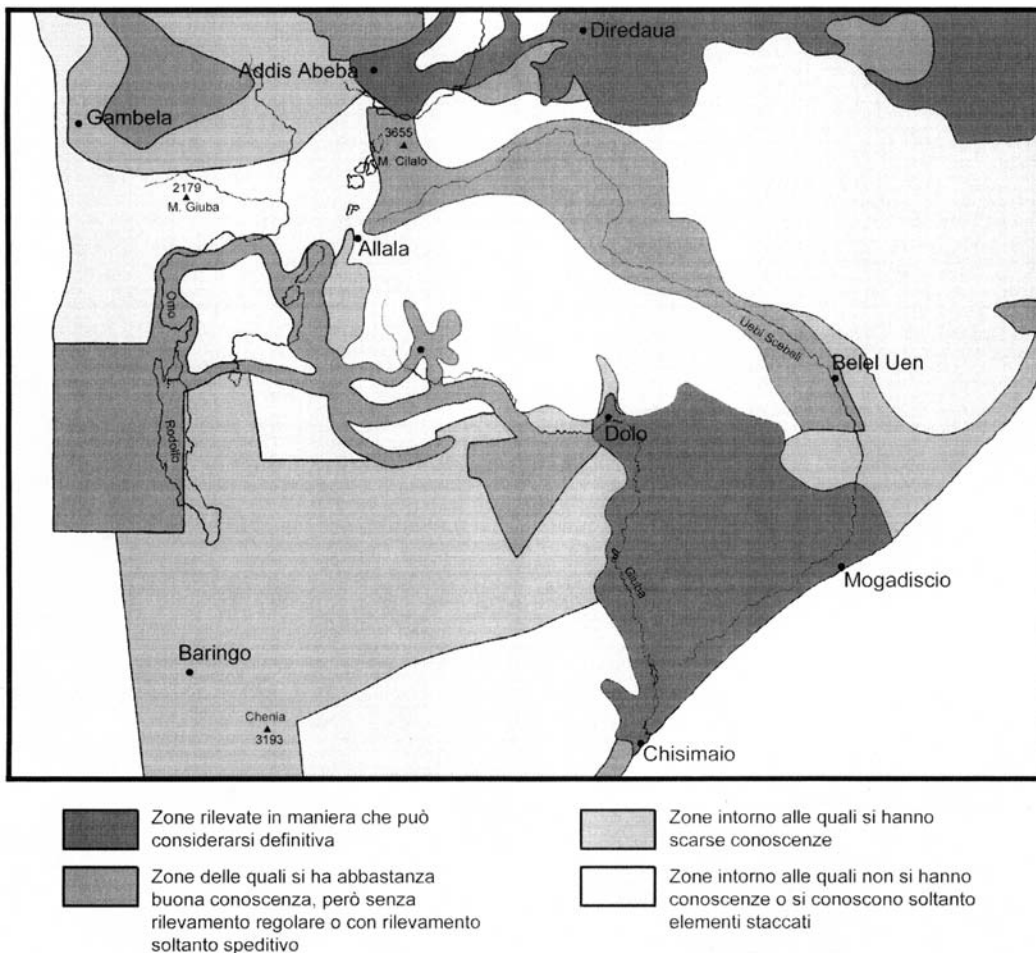


FIGURE 7. Merla's map of the degree of knowledge of the geology of Ethiopia and Somalia, showing how, until comparatively recently, Sacchi's work was still the basis for the geological mapping of the areas explored by the second Bottego expedition.

rift valleys. Knowledge of the volcanics and the other crystalline rocks was greatly enriched by Millosevich's petrographic study of the specimens. For the Tertale region, we have Sacchi's notes, whereas the material he collected was lost. To the north of Ascebo and as far as and beyond Burji (the first section of the route towards Lake Margherita), indeed, some data are more nearly correct than shown on later maps, such as those prepared by Stefanini (1933). See, for example, the interesting discussion of the conformation of Mt. Delo (3600 m) in Merla et al., *op. cit.* p.3.

In the region crossed by the second Bottego expedition, even half a century later, the reliable map (Fig. 6) of the geological knowledge of East Africa attached to Giotto Dainelli's monumental monograph gives an idea of the importance of the data produced. It shows, in fact, a snake-like pattern corresponding to the expedition's travels.

It thus appears that from the scientific standpoint the second Bottego expedition may well rank amongst the best for its age, even though its end spelled disaster for its members. Of the four Italians, two died in the field; and of the native African personnel, of 250 askaris and 30 camel drivers who departed Brava in the company of Bottego, thirty or so deserted. We do not know whether they survived or not, but of those who stayed on with the expedition, at most only twenty survived!

Given the purposes of the expedition, it was economically and politically almost a complete failure. The station at Lugh survived, thanks to Ferrandi, who held it for almost ten years, though repeatedly isolated and occasionally besieged, but it was never a profitable venture. The territories of the Galla Sidama, after the bandits' raids that preceded the expedition and that the expedition actually met, were eventually conquered by Menelik and its assumed natural resources proved to be empty dreams. Finally, the ivory that had been collected in quantity by the expedition in order to pay for part of its expenses, as it was then not uncommon to do, was entirely lost.

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