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Italian scientists and the war in Ethiopia

1. *Scientists-propagandists*

In his speech of 8 March 1934 at the National Council for Research (CNR) plenary assembly, president Guglielmo Marconi called the Italian science for mobilisation to build an empire¹. By then, preparations for Ethiopia's invasion had been started. It was time for fascism to call the Italian people, including scientists, to arms. And scientists began to answer that call, although somewhat lazily: during the following autumn the second Italian congress on colonial studies was held in Naples, but the hopes for an enthusiastic adhesion from researchers were disappointed. «Many researchers – wrote Senator Camillo Monfroni, professor of history and colonial politics at the University of Rome – and among them some of the most authoritative scholars of colonial studies, promised to collaborate; they indicated the subject of their future works or reports and then never showed up any more»². Moreover, the few adherents hadn't shown great interest for Ethiopia, about which no report had been written.

The most responsive scientists to the regime's call were those who had already had some experience in the colonies and were now taking the new climate as a good chance to spread the public recognition of their work. Edoardo Zavattari, for instance – professor in Rome, expert in biology of the colonies, who had undertaken many missions in Libyan territories and would later subscribe the *Manifesto of race* – inaugurated the 1935 series of «Rivista delle Colonie» stating that the journal had taken a «fighting character»³. He also stressed the primary importance of scientific research for achieving the colonial conquest: «Once the occupation and the military

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¹ Cfr. R. Maiocchi, *Gli scienziati del Duce*, Roma, Carocci 2003, p. 39.

² C. Manfroni, *Il secondo congresso di studi coloniali*, «Rivista delle colonie» 1935, p. 912.

³ E. Zavattari, *Scienze biologiche e conquista coloniale*, «Rivista delle colonie» 1935, p. 13.

operations are through, the colonial conquest is an exclusively scientific and mainly biological problem»⁴. A conquered country – continued Zavattari – has to be known in all its many aspects through a careful and well-pondered research activity, without which simple military occupation might fail: «Every country's history of colonial endeavours is painfully rich of tragic examples when the wrong assessment of an apparently minor biological factor led to massive disasters»⁵. Zavattari had no doubt about it: «The colonial conquest is an exquisitely, exclusively scientific problem and, as such, it must be assigned to the experience and competence of technicians and scientists»⁶.

The will to give a «scientific» appearance to the colonial policy clashed with the almost total ignorance about the resources and the people Italy was about to conquer. As scholars were waiting to work on the field, they had to settle for support of the government's propaganda with what was already known – or supposedly known – about the future Italian territory. For example, Carlo Conti-Rossini, Italy's main expert in Ethiopian literature, published an article in September 1935, a few days before the beginning of the conflict: using arguments that could apply to any African country, he stated that Abissinia was incapable of evolution and civil progress, and therefore its conquest was justified⁷.

Many ventured glorious predictions, although basing on very uncertain data. For example, Ettore Cesari and Angelo Testa, from the Hydraulic Studies Office of electrical enterprises association UNIFIEL, studied a way of producing hydroelectric energy by exploiting the Tana lake, on the basis of the existing rough geographical and geological maps. They hazarded the guess that the cost per kwh there would not exceed that of the most productive hydroelectric plants built in Italy⁸. As soon as some technicians were sent to the site, they said it was better to settle for thermoelectric power, as the costs of a hydroelectric plant would have been huge⁹.

After the beginning of the war, such an application of the scientific method to inexistent data became common practice in academic circles. Also those who should have worked on statistical data – that is demographers – were no strangers to this tendency. On the contrary, statisticians started a current of thought aimed at proving the usefulness of Ethiopia's colonisation in the absence of concrete information. Many of Italy's best scholars of socio-economic sciences committed themselves to convincing their readers that the colonies would *necessarily* become a factor of devel-

⁴ *Ivi*, p. 14.

⁵ *Ivi*, p. 16

⁶ *Ibid.*

⁷ C. Conti-Rossini, *L'Etiopia è incapace di progresso civile*, «Nuova antologia», 16 sett. 1935, pp. 171-77.

⁸ E. Cesari, A. Testa, *Notizie sulle possibilità di utilizzazioni idroelettriche nell'AOI*, «Energia elettrica», 1936, pp. 725-810.

⁹ See «Energia elettrica», 1937, p. 244.

opment for Italian economy. While Rodolfo Benini, the most reputable of Italian social scientists, had blessed the Ethiopian endeavour as the solution to our problems («Occupying the land you need to live is a natural right of peoples. Occupying as much land as you need not just for current necessities, but also for the necessities that a developing people is reasonably likely to have in the future is a right as well»¹⁰), many other renowned scholars were engaged in a long dispute against «the slaves of the great empires»¹¹ – generally, English scientists – who were trying to demonstrate the little economic usefulness of the colonies for those states that had them. Giorgio Mortara, Giovanni Demaria, Giovanni Balella, Riccardo Bachi, Francesco Vito, Corrado Gini with his pupils Paolo Fortunati and Nora Federici¹², along with many others¹³, contributed to the blossoming of statistical, political, historical, theoretical studies designed to highlight the great material and demographic advantages that would come to the homeland from the colonies. They were trying to convince people that the thesis of the colonies' uselessness «must bring a secret smile to the face of all its clear-minded advocates»¹⁴. These writings were, to a great extent, aprioristic, as they used data that referred to the relationships between established colonial powers (England, France, the Netherlands, Germany) and their colonies: therefore it was easy for the authors to say that the new territories had been an advantage for those nations. But proving the this would be the case also for Italy and its colonies was something completely different.

In order to give a scientific aspect to the colonial programme, it wasn't necessary for a scientist to write thoughtful essays on the perspectives opened by the war: it was enough to take part in the regime's propaganda. During the whole war of Africa period, the fascist regime took care of carrying out an intense, thorough,

¹⁰ R. Benini, *Le ragioni dell'Italia*, «Giornale degli economisti» 1936, p. 2.

¹¹ G. Mortara, *Sull'inutilità delle colonie*, «Giornale degli economisti» 1937, p. 173.

¹² G. Balella, *L'Impero e il problema italiano delle materie prime*, «Giornale degli economisti» 1936, pp. 788-811; G. Demaria, *La distribuzione internazionale delle materie prime coloniali*, *ibid.* 1936, pp. 768-87; G. Mortara, *Via delle Indie e vie dell'Italia*, *ibid.* 1936, pp. 175-8; *Id.*, *Tendenze autarchiche negli spostamenti internazionali della produzione delle materie prime*, *ibid.* 1938, pp. 531-5; C. Gini, *Sovranità politica e correnti commerciali*, «Rivista di politica economica» 1938, pp. 1073-9; *Id.*, *Colonie e materie prime*, extract from «La vita economica italiana» 1936; R. Bachi, *Politica doganale fra madrepatria e colonie*, Roma, Accademia dei Lincei 1937; G. Demaria, *Aspetti probabili della capitalizzazione coloniale*, «Giornale degli economisti» 1937, pp. 381-400; F. Vito, *L'economia coloniale nel quadro dell'autarchia*, extract from «Rassegna economica dell'Africa Italiana» giugno 1938, n. 6; P. Fortunati, *L'importanza delle colonie per la scienza e la politica della popolazione*, «Annali dell'Africa Italiana» 1940, pp. 151-72; N. Federici, *Le correnti migratorie e le correnti commerciali tra colonie e madre-patria*, *ibid.* 1938, pp. 37-51.

¹³ E.g. A. Garino Canina, *Colonie e materie prime*, «Nuova Antologia» 1937, pp. 261-9; G. Bellincioni, *L'accaparramento inglese delle materie prime*, Roma, Pinciana 1936; A. Giordano, *Colonie e autarchia economica*, «Economia italiana» 1936, pp. 450-4; M. Cioni, *Corporativismo coloniale*, «Economia» 1940, pp. 122-32.

¹⁴ G. Mortara, *Sull'inutilità delle colonie*, quote, p. 177.

pounding propagandistic action, using different means and occasions. Scientists played a major role in this operation, bestowing an effective coverage of scientific rationality with their public support to the programmes, the initiatives, the celebrations of the government, the Fascist party, the corporations and the institutions. There was a seamless merge between the mottos of autarky and war, on one hand, and science and technique on the other hand. This merge justified in front of the public opinion some undertakings that were absolutely unreasonable from a modern scientific and technical standpoint. The ideology of a scientific and technical nationalism, aimed at using science for the good of the motherland, had been born during World War I¹⁵, and with the beginning of military operations in Africa it transformed into a bellicose and arrogant attitude. This translated into speeches and publications with which our prominent scientists became enthusiastic supporters of the government's political choices and turned into officers of a disciplined army of researchers. There is a huge number of such examples, but a few of them will suffice to give the general idea about the atmosphere of approval that the war generated in many scholars.

Luigi Rolla, a worldwide known chemist who had always been moderate in his statements, wrote this during the sanctions period: «In a time when a crazy storm rages on Italy in the name of principles that jar with the unconfessed reasons that inspire the acts and words of the world's most oppressive empire, the propaganda for Italian products is meant mostly for the chemical industries. Our chemists, organised in their corporations, are determined to react in the most effective way and free the Country from foreign enslavement by using all the resources of our land. The Italian universities, which pride themselves with the most glorious tradition in the world, are guiding and disciplining the technicians' noble efforts, shaping their minds and toughening their character»¹⁶. Domenico Meneghini, an expert in the sugar and alcohol industry wrote: «The bilious censors of Geneva and their iniquitous sanctions won't be able do anything against this thriving industry, which has its origin in the reclaimed fields, in the sun and the patient and skilful human work. It gives its contribution to the motherland in a thousand ways: energy from carbohydrates, fuels and explosives. This industry needs to ask for nothing from abroad; on the contrary, it has something to teach»¹⁷. Giovanni Morselli, an authority on pharmaceutical research and products, would unsparingly celebrate the proclamation of the Empire: «The Italian fascist chemists, fervent patriots by a noble tradition, salute the dawn of the Empire with their hearts filled with emotion and pride. They turn their thoughts to the their victorious King, emperor of Ethiopia, glorious symbol of the immortal motherland. They cry out their endless love for the Duce, founder of the Empire, the purest genius that was ever created by the deep and arcane virtues of our race. The Italian chemists, aware of the constructive power of

¹⁵ Cfr. R. Maiocchi, *Scienza e fascismo*, Roma, Carocci 2004, p. 21 e ss.

¹⁶ L. Rolla, *La chimica nella scienza e nella tecnica*, «La chimica e l'industria» 1936, p. 5.

¹⁷ D. Meneghini, *L'industria italiana dello zucchero e dell'alcool e le sanzioni*, *ibid.*, p. 177.

their science with its protean applications, are anxious to participate in the new effort that awaits the Italian people in order to develop the Empire»¹⁸. Livio Cambi took his cue from metallurgy to attack «the fat foreign middle-class, the outdated ideologues of the nations that are now trying to sabotage our achievements, which they could not foresee, as they bet on our scarce industrial potential! However, they did not and do not have the yardstick to measure the passion and the commitment, our mystical dedication to the motherland, which the Duce has aroused in the thousands-year-old soul of our race»¹⁹. The link between the development of the autarkic economy and the preparation of a new war had become particularly clear. Parravano stated that «Italians think of the autarky of the Nation as a necessary complement to the military equipment, and they will use all their energy to complete it and keep it efficient»²⁰.

2. *Research institutes at work*

Scientists and technicians began writing essays of various extents on the (unknown) resources of the new colony, which we are going to examine later. Even if he tried very hard, a single researcher couldn't hope to give a serious contribution to the knowledge about Ethiopia. Clearly, collective explorative missions were necessary. Many institutes were eager to get some credit, and began to prepare various initiatives as soon as our troops started to advance.

Some institutes were structurally designed to investigate colonial issues. Among them²¹, the main one was the Centre for Colonial Studies of Florence, which derived from the Italian Colonial Agricultural Institute, founded in 1904 and in 1938 renamed Agronomic Institute for Italian Africa²². On behalf of the Ministry of Italian Africa, under the guidance of its «historic» director Armando Maugini, this institute began an intense research and training activity with the purpose of supporting the agricultural experiments that were being carried out in the colonies. The institute would send technicians, organise expeditions and try to solve problems as those who

¹⁸ G. Morselli, *Aurora imperiale*, *ibid.*, p. 221.

¹⁹ L. Cambi, *La chimica metallurgica di fronte alle sanzioni*, speech held at the Milan Trade Fair on the 19th of February 1936, in «La chimica e l'industria» 1936, p. 242.

²⁰ N. Parravano, *La chimica e l'autarchia economica della Nazione*, speech held on the 8th of June 1936 at the convention of the Chemists' Fascist National Trade Union, «La chimica e l'industria» 1936, p. 338.

²¹ E.g. the Fascist Institute for Italian Africa, the Institute for the Orient, the Oriental Institute of the Royal University of Rome, the Oriental Institute of Naples, Italy's African Society (also in Naples), the Military Geographical Institute of Florence, the Schools for the Treatment of Tropical and Subtropical diseases at the universities of Rome, Turin, Milan, Padua, Modena, Messina, Bologna, the Colonial Garden of Palermo, the Colonial Herbarium of Florence.

²² In 1959 it became the Overseas Agronomical Institute.

were working overseas reported them. The Centre was assisted by the Experimental Agricultural and Zootechnical Centre of Italian Eastern Africa²³.

Other scientific institutions had nothing to do with colonial problems, but shared the enthusiasm surrounding the Ethiopian campaign anyway. If somebody hadn't participated in the celebrations, he would have looked suspicious to the authorities. In some cases, these interventions of neophyte institutes in the field of colonial studies produced good results. In some other cases, the outcomes were less fortunate.

Among the successful attempts, that of the Academy of Italy stands out. The Academy, founded by Mussolini in 1926 but officially inaugurated in 1929, gathered Italy's main cultural personalities and served basically to the image of the country. In January 1936, when the war in Ethiopia was just at the beginning, the Study Centre for Italian Eastern Africa was created inside the Academy. This was due mostly to Alberto De Stefani, a great name in Italian economy and politics, who managed to raise funds from Iri, Bank of Rome, Bank of Italy, Social Security Funds and others. The presidency was taken up by De Stefani himself, whereas geographer and palaeontologist Giotto Dainelli became the director²⁴. Each year the Centre would study a different region of the Empire, indicated by the Ministry of the Colonies. The institution stated that its goal was «directly promoting research, uniquely for the good of the government and the country»²⁵. In accordance with this project, in November 1936 the Centre and the ministry approved what would become the most famous exploratory mission in Ethiopia, directed by Dainelli in the lake Tana region. The vague notions available at the time indicated this region – although hardly reachable – as the most suitable for a colony of white farmers. The departure took place in January 1937 and the expedition lasted seven months. Among the participants was Lidio Cipriani, a racist extremist, but also an undisputed expert in African anthropology and ethnology as a consequence of his many explorations in the Black Continent²⁶.

²³ The centre published the journal «Colonial Agriculture», which gives a general idea about its activities. Today's Overseas Agronomic Institute has a very vast archive about its work during the fascist era. Its index, rich of information, is available on the Internet. About the institute's history see AA.VV. *L'Istituto Agronomico per l'Oltremare: la sua storia*, Firenze 2007. About director Maugini see AA.VV. *Armando Maugini nel centenario della nascita*, Firenze 1989; E. Maugini, L. Fabbri (edited by), *Storia di una vita. Note biografiche di e su Armando Maugini*, «Bolletino della Società Geografica Italiana», 1998, pp. 195-234.

²⁴ See G. Vedovato, *Giotto Dainelli tra scienza e politica*, «Rivista di studi di politica internazionale», 76, 2009, pp. 381-421.

²⁵ Giotto Dainelli, *La missione di studio al lago Tana*, in Reale Accademia d'Italia. Centro studi per l'Africa Orientale Italiana, *Missione di studio al lago Tana*, vol. I, *Relazioni preliminari*, Roma, R. Acc. d'It. 1938, p. 5. Reale Accademia d'Italia. Centro studi per l'Africa Orientale Italiana, *Missione di studio al lago Tana*, vol. I, *Relazioni preliminari*, Roma, R. Acc. d'It. 1938. Dainelli published the results of his work in G. Dainelli, *La regione del lago Tana*, Milano, Mondadori 1939.

²⁶ See R. Maiocchi, *Scienza italiana e razzismo fascista*, Firenze, La Nuova Italia 1999.

The ensuing scientific materials about the multiple geographical, biological and anthropological aspects of the region began to be published in May 1938 and would later constitute the grounds for a monumental publication²⁷. After this mission, the ethnographic and anthropological characteristics of Ethiopia were the subject of later studies during missions of lesser proportions, which started outlining the intricate patchwork of Ethiopian populations²⁸.

Just like the Academy, some institutes managed to act as Africanists with some success, but there were others which couldn't live up to their past of colonial studies. This was the case of the glorious Italian Royal Geographical Society of Naples. This association had been the most important cultural and political platform of colonialism for decades; now, with the foundation of the empire, its dream was coming true²⁹. Right after the proclamation of the empire, a new agenda was approved: the Society claimed to «the duty and the moral right to continue the work of its former leaders and pioneers»³⁰. Therefore it promptly drew up a programme of exploratory missions to go along with the dissemination of the available information on the newly conquered territories³¹.

The exploration plan was forwarded to the highest colonial authorities, but there was no feedback. In the Society's meeting on the 23rd of December 1938 (during which the Jewish members were expelled without a discussion) everybody was informed that there was still no answer from the viceroy about the exploration projects in Ethiopia. In the meantime, the proposals on Southern Dancalia and Aussa had become obsolete because of the journeys others had made: «We therefore suggest H.H. the Viceroy to indicate other regions whose exploration would be more

²⁷ See Reale Accademia d'Italia. Centro studi per l'Africa Orientale Italiana, *Missione di studio al lago Tana*, vol. I. This volume was followed by 7 more.

²⁸ Besides Cipriani, who continued travelling in Ethiopia, and Emilio Scarin there are other names that must be mentioned: M. De Gaslini, M.M. Moreno, S. Nava, T. Piccirilli, A. Pollera, N. Puccioni, A. Vandone, F. Zanon, R. Bellotti, R. Biasutti, R. Corso, A. Mizzi, G. Villari, E. Cerulli, R. Trevisani, B. Francolini, V. Grottanelli.

²⁹ «It is not without emotion and legitimate pride that the Italian Royal Geographical Society sees today the completion of its boldest dream and most burning wish, thanks to the intelligence of the leaders, the military victory and the people's virtue. Scholars, patient researchers, pioneers who dedicated their lives to success or sacrifice, restless travellers and great explorers left from here to show Italy its way to prosperity, power and glory on the Black Continent. [...] This humble smithy has kept alive the sacred fire of passionate scientific research, generous spirit of adventure, even in times of undeserved ill luck and cowardly surrender. Here was faith preserved, here was hope nourished, here was the new colonial awareness of Italian moulded, here was the project of overseas endeavours drawn», C. Zoli, *L'Impero italiano dell'Africa Orientale*, «Bollettino della R. Società Geografica Italiana» S. 7, v. 1 (1936), p. 484. Corrado Zoli, the Society's president, had been governor of Eritrea from 1928 to 1930, and he also wrote a book on Etiopia in 1935: *Etiopia d'oggi*, Roma, Soc. Arti Grafiche, 1935.

³⁰ F. Surdich, *Le spedizioni scientifiche italiane in Africa Orientale...*, p. 447.

³¹ See R. Società geografica italiana, *L'Africa orientale*, Bologna, Zanichelli 1936.

useful»³². During the executive board session on the 22nd of March 1939, it was announced that Corrado Zoli (the Society's president) and the viceroy had met and outlined a programme of missions, which the General Government of Ethiopia would provide with equipment and men³³. Also this project didn't translate into any real result, and on the 6th of November 1939 the council, after mentioning the umpteenth exploration project that received no reply from the authorities, bitterly concluded that «political circumstances» had «called off all exploratory missions of any kind in Eastern Africa»³⁴.

In their attempts to make themselves noticed, the scientific associations were often jealous of their work and – whenever possible – refused to collaborate with rival institutes. The most resounding case was that of the National Council for Research (CNR), which had to suffer the rudeness of the Ministry of Colonies and the Academy of Italy. The CNR, founded in 1923 and then «fascistised» in 1929, was the biggest Italian research centre³⁵. It had a complicated structure, but only a little space for colonial studies. Nevertheless, the CNR wanted to have its say in the numerous activities that contributed to the knowledge about the new lands of the empire.

The Directorate had made its decision in due time, and in February 1935 it had proposed to the Ministry of the Colonies the creation of a commission for overseas mineral prospecting. The ministry had given no reply, though, and in December the Directorate suggested directly to Mussolini to organise a mission that, while following the advance of our «heroic soldiers», would prospect the conquered lands and «explore the presence of gold in the sands of the Tigray»³⁶. The Duce didn't give any answer, but in February the Ministry of the colonies replied, declaring that it wasn't interested in the CNR's proposal for the moment, and that it thought the project would rather be «postponed to a more favourable time». Meanwhile, on the 19th of January the Academy of Italy – as already mentioned – had approved the dispatch of scientific missions to Ethiopia. Therefore the Directorate decided to contact the Academy in order to send its own delegates to explore the Ethiopian riches. However, not even the Academy showed much appreciation for the CNR's cooperation offer, although – quite remarkably – both the institutions had the same president: Guglielmo Marconi. The Academy didn't reply until the end of the war of Africa, when it stated that it wasn't interested in mineral prospecting in the colonies (which wasn't true). The Directorate didn't give up and on the 8th of May, the day before the proclamation of the Empire, taking advantage of the favourable moment and the general enthusiasm, it put forward the idea of a mining commission at the Ministry of the colonies. This time, though, it tried to get Mussolini's support. The

³² Bollettino Società Geografica Italiana, s.7, v.3 (1938), p. 350.

³³ Ibid., s. 7 vol. 4, (1939), p. 462.

³⁴ Ibid., s. 7, vol. 5 (1940), p. 159.

³⁵ About the history of the CNR see R. Maiocchi, *Gli scienziati del Duce*, Roma, Carocci 2004.

³⁶ See R. Maiocchi, *Gli scienziati del Duce*, quote.

response wasn't totally negative, but also not really positive: at the end of June the CNR still had a research plan for the colonies ready «to be taken into consideration in due time by the Ministry of the colonies». In particular, it seemed possible to start a photogrammetric survey of Ethiopia. As president of the Academy of Italy, Marconi had also ordered that a delegation from CNR should attend the sessions – held at the Academy – of the already five-month-old commission for scientific missions in Italian Eastern Africa. Suddenly, on the 1st of July, a commission of chemists which had little to do with photogrammetry was ready to leave under the direction of Henry Molinari.

The proposals for the exploitation of Ethiopia that the mission made upon its return in August were disheartening, to say the least. The presence of good quality durum wheat was remarkable, but a baking industry would have to be created from scratch; there was just one alcohol factory that could only produce spirits, and it would have to be reorganised to produce also fuel; the availability of hides made it possible to start the production of shoe leather, but it would have been necessary to introduce tanning techniques that differed from the primitive local ones. The Ethiopian scrubby cotton plantations could be the foundation for a textile industry that would base upon Italian machinery and the use of Indian fabrics to integrate the fruits of the local territory (whose resources were therefore limited to the labour). Finally, the habit of letting the butchering waste rot had to be fought with measures that stimulated its use.

But it's worth telling more about Molinari than about the disappointing results of this mission³⁷. He was well known to the police because of his anarchical activities. He had refused to pledge loyalty to the fascist regime and, as a consequence, had to retire from his academic position. Because of his past, the police refused him the passport to go to Ethiopia, and Mussolini himself had to intervene to grant him the permission to expatriate. Also in the following years, Molinari was appointed to very important governmental posts, participating as well in the work of strategic commissions, whose activities were secret. Clearly, the Duce was ready to turn a blind eye to the political inclinations of highly-qualified technicians. On the other hand, the African endeavour was really too fascinating also for some anti-fascist technicians.

3. *The organisation in the colony*

All the activities coming from the motherland were sided by new structures built in the conquered territories. A new state apparatus was now needed. The law for the organisation and the administration of Italian Eastern Africa, approved by the Ministers' Cabinet on the 2nd of June 1936 and known as the «organic law», set

³⁷ About Molinari see A. Galbani, *Antifascismo e resistenza nel Politecnico di Milano*, in E. Decleva, *Il Politecnico di Milano nella storia italiana (1914-1963)*, «Quaderni della Rivista Milanese di Economia» Bari, Laterza 1988, vol. 1, pp. 255-8.

a general normative framework that included a great number of measures aimed at regulating life in the colony down to the details. It is widely known that the «organic law» based upon the principle of not giving any power the Ethiopian chiefs and excluding them completely from the administration. It is also well known that this principle turned quickly into a big mistake that made it very hard to manage the Ethiopian society. Such a mistake was due to the very poor knowledge of the local social structure and mentality. It must be noticed that the man who suggested this disastrous approach to Mussolini and to the newly appointed Minister of the Colonies was Enrico Cerulli³⁸. Cerulli was an official of the Ministry of Foreign Affairs who earned posts of great responsibility in the colonial administration, but he was also a worldwide known and respected scholar of the literature and history of the Horn of Africa. He looked just like the right man to give Mussolini advice about how to deal with the Ethiopians. However, his rich academic production³⁹ didn't keep him from giving the Duce questionable suggestions that showed an overall inadequate knowledge of the population of the Empire in the making.

During the second half of 1936 the reorganisation of the new colonies was quite intense from a normative standpoint. The 2384 decree law (14 December 1936) is particularly interesting, as it established the technical services of the Ministry of the Colonies. Aside from the colonial police and the colonial interpreters, new corps were opened for engineers, agriculturalists, doctors and chemists. Also mining and postal agencies were created. Nevertheless, a single colonial agency dedicated to the industrial activity was not established, which explains much about the real chances to start any kind of industry.

With the exception of the police, all these agencies were extremely understaffed: about ten engineers were assigned all the tasks for a country that was four times bigger than Italy! Generally speaking, colonial technicians weren't completely inexperienced, as staff already operating in Lybia were moved to Ethiopia.

The offices that received the best treatment were those related to mineral prospecting, as they seemed to have the best economic perspective. In March 1937 came the creation of a General Mining Inspectorate and a Geological-Geophysical Section at the General Government of the Italian Eastern Africa in Addis Abeba. Smaller mining offices were also established elsewhere. The central office started working in June 1937. The five peripheral offices (Asmara, Mogadiscio, Gimma,

³⁸ See M. Dominionì, *Lo sfascio dell'impero*, Roma-Bari, Laterza 2008, p. 71.

³⁹ Just the more relevant titles: *Folk-literature of the Galla of Southern Abyssinia*, Cambridge, (Mass.), 1922; *Etiopia Occidentale (dallo Scioa alla frontiera del Sudan). Note del viaggio, 1927-28*, 2 Vol. Roma, 1930-1933; *Documenti arabi per la storia dell'Etiopia*, Roma: G. Bardi, 1931; *Studi etiopici*. Vol. I: *La lingua e la storia di Harar*, Roma: Istituto per l'Oriente, 1936; *Studi etiopici*. Vol. II: *Le lingue e la storia dei Sidamo*, Roma: Istituto per l'Oriente, 1936; *Studi etiopici*. Vol. III: *Il linguaggio dei Giangerò ed alcune lingue Sidama dell'Omo (Basket, Ciara, Zaissè)*. Roma; Istituto per l'Oriente, 1938.

Gondar, Harar) began their activity in the early months of 1938, when the mining system of Italian Eastern Africa was set up by the 1422 decree law (21 February 1938), later completed by the 1412 decree law (3 June 1938). All these offices were ridiculously undermanned. Among their tasks, probably the most important one⁴⁰ was preparing and supporting public and private economic ventures by providing information about that far-away and almost unknown world.

All the study and propaganda activities were nominally led by the Study Office of the Ministry of the Colonies. It had multiple tasks: collecting and updating data and news, transmission of all the information to scholars, state agencies and bodies, regulation of the cultural and propaganda institutions in the colonies, activity coordination, taking care of relations with international colonial institutes, organisation of study missions, scientific research and explorations, publishing studies and academic works, taking care of translations, cartography, statistics, historical archives and also of the King's Colonial Museum. There is no study about the real effectiveness of this office. It can only be valued by its publishing activity, which was abundant and issued thick academic works along with handbooks for technicians assigned to the colonies. Its biggest achievement was a series of volumes called «Annals of Italian Africa»⁴¹, rich with information, data and analyses, different from the propagandistic celebrational frenzy that characterised most of the publications in the colonies during those years.

4. *Discovering underground treasures*

What was known in Italy about the mineral riches of Ethiopia at the end of the war was just the content of two articles by German authors⁴². The articles were translated and published in the first issue (July 1936) of a new magazine, «Raw materials in Italy and in the Empire». One of the two authors, Robert Hesse, had supervised the first mineral prospecting activities ordered by the Negus, so he knew what he was talking about. The articles confirmed the presence of gold deposits, but gave no further indications. The Italian studies in 1936 simply repeated this statement: all is known is that there is gold somewhere⁴³. Nevertheless, other inter-

⁴⁰ These offices dealt with the concessions, monitored the compliance with the law and the feasibility of the implemented techniques, organised their own explorations.

⁴¹ The «Annali», edited by the Studies Office, were published by Mondadori. They are the main source of information about the Office's activities.

⁴² B. Geier, *Giacimenti di oro e di platino nella provincia abissina dell'Uollega*, «Materie prime d'Italia e dell'Impero», 1936, pp. 4-12; R. Hesse, *L'oro nella provincia di Beni Scianguil*, *ibid.*, pp. 13-26.

⁴³ See among others: V. Ravizza, *L'Abissinia nel campo geominerario*, Ed. Arti Grafiche, Milano 1936; F. Penta, *Saggio di un quadro delle possibilità e delle risorse minerarie dell'Africa Orientale*, «Materie prime d'Italia e dell'Impero», 1936, pp. 128-175.

national studies claimed that the Abyssinian mining potential wasn't unknown, but simply inexistent⁴⁴.

«Raw materials in Italy and in the Empire» was almost exclusively dedicated to the mineral resources of the African territories, a clear sign of the great interest this subject aroused. Francesco Savelli, who himself owned and directed some mines, was the founder and leader of the magazine. Savelli was one of the few who openly criticised the government's policies in the colonies. Starting from an initial full approval⁴⁵, Savelli shifted further and further away from Fascism. He joined the Action Party and during the Nazi occupation of Rome he offered his printing house for the party to print anti-fascist propaganda and the newspaper «Free Italy». Savelli was reported to the police and on 5 January 1944 he was arrested and taken to Tasso street, where he was repeatedly tortured. On 24 March he was taken from Regina Coeli prison and executed at the Fosse Ardeatine.

In his evaluation of the fascist mining policy in Italian Eastern Africa, Savelli was convinced that careful scientific studies had to be carried out before massively exploiting the resources. On the contrary, the government had made significant concessions to private groups⁴⁶, thus reducing the possibility of disinterested scientific explorations in the least accessible and promising territories. Among the private groups, two of them had received an especially favourable treatment, which engendered an almost monopolistic situation. AOI Anonymous Mining Society, led by Piero Puricelli with a 51% Italian capital and a 49% German capital, already had the monopoly of road works in Italy. A hundred percent Italian Ethiopia's Mining Company, with Guido Donegani as president, had the monopoly of the chemistry market. It's worth noticing that Puricelli's expedition, which left in March 1937, was made up of eleven German scholars and only four Italians. Other missions had a similarly significant component of German technicians.

According to Savelli, such a great room for private initiative left the state mining company (AMAO, Eastern Africa Mining Company) with actually nothing to do, despite its considerable dimensions⁴⁷. This thought was reinforced by the first AMAO missions, which took place in Eritrea and not in Ethiopia (Bonarelli-Riboni and Bartoli-Bulano-Sevieri missions). However, AMAO's worry about having nothing to do was probably excessive, because, even if private groups got the best deals, the territory left for exploration was huge. During the course of the war the topographic

⁴⁴ See P. Lamare, *Le haut plateau du Harrar et les richesses minérales au Sud de l'Abyssinie*, «Bulletin de l'Association de géographes français», v. 12, 1935, pp. 147-9.

⁴⁵ See the magazine's first editorial, *Noi saremo degni* [We shall deserve it].

⁴⁶ Indeed, many companies were given mining permits. Here are some of those that operated in Africa, in addition to the two we mentioned: ACCAI, MAESIA, TORAT, Prasso, Tamanti, SAPIE, AMMI, SMIT (Italian-German), COMINA, SAMAOI (Italian-German), ACAI, Società Mica.

⁴⁷ In February 1938 AMAO had a staff of 90 Italians and 1500 locals, along with 2 tractors, 20 vehicles e 900 load packs. See «Materie prime d'Italia...», 1938, p. 57.

knowledge of the new land had proven to be insufficient or wrong and the Italian officers had very often encountered more trouble in orientating themselves than in fighting the enemy. In June 1936 various agencies prepared a number of project for the drafting of an Italian Eastern Africa map on a scientific basis. The Ministry of the Colonies and the Ministry of War fought over the direction of these works. Finally, the task of drawing a 1:400.000 map in four years was given to the Geographical Military Institute of Florence, which had to take not only the criticism of Lessona, the minister of the colonies, but also the remarks of the air force, whose chief of staff and undersecretary, Giuseppe Valle, declared many times that the work of the Geographical Institute was scientifically modest⁴⁸. Such a tense situation caused delays and the first topographical measurements began only in the early months of 1938. The 1:400.000 maps remained an illusion.

The previous geological knowledge was basically limited to Eritrea, Dancalia and the northern part of Somalia. They were the fruit of Giuseppe Stefanini's and Paolo Vinassa de Regny's researches⁴⁹. Actually, only in 1936 did the first reliable information about Libya begin to be available⁵⁰. In 1937 several private and public geological and mining missions started to penetrate the Ethiopian lands. AGIP, the public agency for oil research founded in 1926, made the greatest effort. In 1937 and in 1938 AGIP, in cooperation with the Academy of Italy, organised several geological and mining missions, among which those led by Michele Gortani (University of Bologna) and Angelo Bianchi (University of Padua) in Somalia, Dancalia, Ongaden and Harar. They drew a map of Dancalia and Harar of great importance⁵¹. From a mining perspective, the AGIP missions didn't discover anything interesting. AGIP obtained its best results with the oil fields of the Dahalac islands, in front of Massaua, that is in territories that Italy already owned before the war.

The whole set of researches gave disappointing results⁵². In January 1937 engi-

⁴⁸ See M. Dominioni, *Lo sfascio dell'impero*, quote, pp. 39-42.

⁴⁹ G. Stefanini, *Saggio di una carta geologica dell'Eritrea, della Somalia e dell'Etiopia*, 1933, updated and published by CNR and the Military Geographical Institute in 1938; P. Vinassa de Regny, *L'Eritrea geologica e mineraria*, Firenze 1923; Id., *Dancalia*, Roma 1924.

⁵⁰ A. Desio, *Relazione preliminare sulla missione geologico-morfologica della Reale Società Geografica italiana nel Fezzàn*, «Materie prime d'Italia e dell'Impero» 1936, pp. 273-281.

⁵¹ M. Gortani, A. Bianchi, *Osservazioni geologiche e petrografiche nella regione di Harar*, «Atti XXVI riunione SIPS», Roma 1938, vol. 1, pp. 235-51; Id. *Nella Dancalia meridionale*, «Bollettino della Società Geografica Italiana», ser. 7, vol. 4 (1939), pp. 113-23. More reports from Gortani in «Rendiconti della R. Accademia Scientifica dell'Istituto di Bologna» 1939.

⁵² See among others, Ministero dell'AO, Azienda Miniere A.O. (AMAO), *Rapporto sull'attività dell'AMAO*, Roma, Tuminelli 1938; Società anonima per le imprese etiopiche, *Giacimenti auriferi nell'Uollega e nel Beni Sciangul*, Roma 1938; A. Sestini, *Studi geologici nell'AOI*, «Boll. Soc. Geogr. It.», ser. 7, vol. 3 (1938), pp. 34-6; C. Viezzer, *Itinerari geologici nel territorio dei Galla e Sidama da Gimma al confine sudanese*, «Materie prime d'Italia e dell'Impero», 1938, pp. 396-403; A. Villaminar, *Il massiccio ferrifero Mai-Gudo nel problema autarchico dell'Impero*, Roma, Ministero dell'Africa Italiana 1938; P. Volpi Bassani, *Note sullo sfruttamento dei giacimenti auriferi del territorio etiopico*, «L'industria mineraria» vol. 9, 1937, pp. 39-49.

neer Luigi Usoni, who was chief of the mining office in Addis Abeba after filling the same position in Eritrea, stressed the virtually complete general ignorance about the Ethiopian mineral resources, including the supposed presence of gold⁵³. A year later ignorance had given way to disappointment, as the territory had no mining potential. In March 1938, in his speech at the Senate, Paolo Vinassa de Regny, who was a geology professor and the dean of the university of Pavia, remarked the disappearance of the previous year's enthusiasm and pushed for a more realistic approach⁵⁴. The production of gold also seemed far from expectations. Already in September 1937 Davide Fossa, work supervisor in Eastern Africa, wrote to minister Lessona that, as far as the production of gold was concerned (and not only), «Italy lost its privileged position in front of the government of the Negus» and Lessona replied that what Fossa had said was «absolutely correct»⁵⁵. It is well known that the overall impact of the colonial endeavour on the Italian gold reserves was catastrophic: in 1934 they were around 5.811 millions, in 1938 they had decreased to 3.074 millions⁵⁶.

5. *Agricultural riches*

Faced with the disappointment about the underground resources, Italy hoped to compensate with the good results of agricultural activities. The knowledge of the conditions and the potential of agriculture in Ethiopia wasn't much deeper than the knowledge of local minerals. Nevertheless, the governmental propaganda had boasted the good perspectives that the war would open for agricultural workers, promising wonderful chances for the poor Italian farmers, whereas minerals had more appeal to the rural masses. That is the reason why many works were written about Ethiopian agriculture with propaganda purposes⁵⁷. However, the propaganda was supported by a remarkable activity of study and experimentation.

Cultivations and stock-breeding were strictly dependant on meteorological conditions, which varied greatly from one Ethiopian region to the other, ranging from the desert to the snow-capped mountains⁵⁸. A meteorological service had to be

⁵³ L. Usoni, notes in «Rassegna economica delle colonie», January 1937.

⁵⁴ P. Vinassa de Regny, *Poche parole sul bilancio dell'AOI*, «Materie prime d'Italia e dell'Impero», 1938, p. 139.

⁵⁵ The correspondence is partially published in M. Martelli, M. Procino, *Enrico Cuccia in Africa Orientale Italiana (1936-1937)*, Milano, Angeli 2007, p. 31.

⁵⁶ See E. Tuccimei, *La banca d'Italia in Africa*, Roma-Bari, Laterza 1999, p. 169.

⁵⁷ See for example Livius, *Le immense possibilità dell'agricoltura in Africa Orientale*, Roma, Pinciana 1936; C. Manetti, *Etiopia economica*, Firenze, Bemporad 1936; V. Rivera, *Prospettive agricole dell'Impero Etiopico*, Roma, Libreria di Scienze e Lettere 1936.

⁵⁸ See G. Sala, *Il clima dell'Africa orientale italiana*, Bergamo SESA, 1938; F. Eredia, *Stato attuale delle conoscenze sul clima dell'A.O.I.*, in *Atti del III Congresso di Studi Coloniali*, vol.V, Firenze 1937.

organised from scratch in Ethiopia and the man chosen for the job was Amilcare Fantoli, who had organised a similar service in Eritrea and Somalia⁵⁹. Fantoli travelled relentlessly through all the conquered land, setting up meteorological station, even when the war broke up the links with Italy⁶⁰.

Also the knowledge of local hydrography was strictly connected with meteorology and equally important for agriculture. The Dainelli mission to the Tana lake (a lot was written about it) provided information about the hydrological situation of the great lakes region, which was supposedly very suitable for agricultural settlements. As for the rest of the country, in 1937 a mission under the command of Aristocle Vatova was organised. Vatova was the director of the Institute of Marine Biology of Rovigno. A great expert of the northern Adriatic Sea, he had never been to Africa (nor would he return to it after his mission), but he was disciplined and undertook an exhausting 6.000 kilometre march, coming back with a lot of information⁶¹.

The researches on agriculture and stock-breeding in the colony encompassed a wide range of problems, giving origin to such a variety of publications that we can't hope to analyse them all here in depth⁶². There were many private and public initiatives, involving a great quantity of scientific and technical staff. A significant part of the research activity was carried out with the support of the aforementioned Agronomic Institute of Italian Africa, under the direction of Maugini. Also the Experimental Station for paper and textile fibres of Milan, led by Camillo Levi, played an important role in the use of fibres from Ethiopian plants.

Despite the display of optimism in the works of the propaganda, it didn't take much to realise that the concrete goals that were set were quite modest. As it was already known⁶³, the cultivation of cereals wasn't particularly suitable for the climate conditions and the lands of the colonies (with the exception of Libya)⁶⁴, and indeed

⁵⁹ See A. Fantoli, *Bibliografia meteorologica e geofisica dell'Impero etiopico, Eritrea e Somalia*, «Rassegna economica delle Colonie» 1936, pp. 514-21.

⁶⁰ See A. Fantoli, *Una recente missione in A.O.I.*, various articles published under the same title in «Bollettino della R. Società Geografica Italiana», 1938 and 1939.

⁶¹ Cfr. A. Vatova, *Notizie idrografiche sui laghi dell'Africa Orientale Italiana. Nota preliminare*. Rend. R. Acc. Naz. Lincei Ser. VI, 28 (5-6), 1938, pp. 172-175; *Notizie idrografiche e biologiche sui laghi dell'A.O.I.* «Thalassia» IV, 9, 1940, pp. 1-25. *Itinerario e diario generale della missione ittologica in A.O.I.* «Esplorazione dei laghi della Fossa Galla». Vol. I., pp. 1-127, edited by Ministero dell'Africa Italiana, 1941; *I laghi della Fossa Galla*, «Boll. R. Soc. Geogr. It.» Serie VII, 7, 1942, pp. 146-154, 257-265.

⁶² You can get a general idea by looking up the bibliographies on the geographical works about Italian Eastern Africa edited by Elio Migliorini and published on Bollettino della R. Società Geografica Italiana.

⁶³ See I. Baldrati, *La colonizzazione bianca sull'altopiano etiopico*, «Atti Georgofili» 1936, pp. 314-87; V. Rivera, *Prospettive agricole dell'Impero etiopico*, Roma, Bardi 1936.

⁶⁴ Libya did export some wheat, which represented the totality of the wheat exported by the Italian colonies (9.238.000 out of a total 9.395.000 liras in 1938). On the other hand, Northern Africa imported 45 million liras worth of flour.

wheat remained the most massively imported item in the colonial economy. Local cereals were studied and the CNR examined their nutritional content⁶⁵, but it was clear that the difficulties in making the colonies autonomous in terms of cereals were almost impossible to overcome. It was equally impossible to dream of a future when the colonies could export foods: the question wasn't if they would ever be able to support Italy's food autarky, but if they would ever be able to sustain themselves⁶⁶. In fact, not only cereals were scarce, but also meat had to be imported. The local fauna, which was supposed to be very abundant despite the lack of real data, had a low quality and, most importantly, the cattle was cut down by the plague, which made their meat impossible to eat⁶⁷. In a desperate attempt, CNR examined the possibility of making contaminated meat edible through a drying process, as the locals did⁶⁸. Prominent scholars also asserted it was necessary to substitute wine, to which Italian settlers were very attached, with local mead⁶⁹.

Another one of the supposed riches of the Ethiopian fauna were wool sheep. In February 1937, wool entrepreneur Gaetano Marzotto founded the Italian Company of Zootechnical studies and breeding, which immediately sent its technical staff to estimate the ovine resources in order to assess the potential for the production of wool. The results were disappointing: the Libyan sheep were fit for the production of meat, not wool, and the resources of Eastern Africa were virtually inexistent. After a few unsatisfying experiments of breeding local sheep, a decision was made to import some high-quality heads of wool sheep from Kenya, but by the start of 1940 only 250 sheep and 25 rams had been imported⁷⁰. The only good that the African fauna was able to contribute to the Italian autarky with were hides, which were the second most exported items overall and Ethiopia's first one. The Italian

⁶⁵ See R. Ciferri, *I cereali dell'Africa italiana*, Firenze, Istituto agronomico per l'Africa italiana 1939; E. Massi, *La funzione dei cereali minori nell'AOI*, «L'autarchia alimentare» 1938, n. 3, pp. 12-5. Sabato Visco was charged by the CNR of assessing the biological value of Eastern Italian Africa's cereals and legumes. To his great satisfaction, he claimed that the «Cicer arietinum» of Eritrea has a significantly higher value than the Italian one. See *Alcune iniziative del Consiglio nazionale delle ricerche ai fini dell'autarchia*, Roma, Cnr, January 1938, p. 23.

⁶⁶ The magazine «L'autarchia alimentare», which was first issued in June 1938 with the support of the Banana Monopoly Enterprise, was dedicated to the «food contribution to the Empire». Its articles clearly demonstrate that the ultimate goal was to make the colonies self-sufficient, certainly not making them a reserve of food for Italy.

⁶⁷ U. Lombardi, *Per l'utilizzazione razionale del patrimonio zootecnico etiopico*, «Ingegnere» 1936, pp. 383-6; F. Valori, *Il problema zootecnico in A.O.I.*, «Annali dell'Africa Italiana» 1938, pp. 1035-60; A. Saitta, *Il patrimonio zootecnico dell'Africa Orientale Italiana*, «Rassegna Economica dell'Africa Italiana», 1939, pp. 771-5; D. Giovine, *Igiene e malattie del bestiame: con cenni sulle malattie più comuni nell'Africa italiana*, Torino, UTET 1938.

⁶⁸ See *Alcune iniziative del Consiglio nazionale delle ricerche...*, quote, p. 21.

⁶⁹ A. Chigi, *I prodotti dell'apicoltura nell'alimentazione dell'Impero*, «L'autarchia alimentare» 1938, n. 2, pp. 11-3.

⁷⁰ See *La costruzione dell'Impero...*, quote, vol. 4, p. 1130.

government's decision to export hides to Italy to support autarky deprived Italian Eastern Africa of one of its few monetary incomes and engendered an increase of the original prices, which reached levels well above the international market prices and caused serious speculation⁷¹.

The greatest hopes to get a contribution to autarky from the colonies were focused on cotton and other textile fibres, oily seeds, coffee, cocoa, wood, bananas and hides. The state Agency for Ethiopian Cotton and the private National Company for Ethiopian Cotton started several unsuccessful cultivation experiments. Only from Somalia came an importation worth around 10 million liras (one must bear in mind that before the sanctions Italy used to import raw cotton for over 500 million liras). The Company for Ethiopian Textile Fibres was founded with the aim of using the textile fibres of Ethiopia's vegetation. The company examined the hibiscus as a substitute for jute (a Company for Jute and Similar Fibres couldn't be founded). It also took into consideration the doum palm leaf for ordinary sackcloth, as well as the coconut and the agave fibres, both in Somalia⁷². All these initiatives gave no result and in 1940 the Office of Studies of the Ministry of Italian Africa had to admit that «at the moment only a few fibres can be of some practical use»⁷³. The Italian Company for Oily Seeds and Fruits, which was established within the national consortium of oily seeds producers, built two oil mills in Dessiè and Harar. They treated local sesame seeds and linseeds but could not produce any exportation. The Imperial Company for the use of Ethiopian wood essences aimed at exploiting the forest of Uadarà, in the Galla Sidama territory⁷⁴. After a couple of years it abandoned the project, turning to the woods of the Harar region, where the most relevant discovery was the bamboo cane, which could give cellulose and therefore aroused enthusiasm in Italian scientists, but there was no practical implementation. In 1940 this company had only managed to start the construction of the first modern sawmill in the colonies⁷⁵. The Ethiopian Tannin Company had more success in its search for plants to use for tannin extracts, an essential component for the tanning and dyeing indus-

⁷¹ See U. Bottazzi, *Dati circa l'attuale situazione dell'Africa Italiana (fine 1938)*, Archivio Centrale dello Stato, Fondo CNR (from now on ACNR), b. 264, f. 2.

⁷² On the search for textile fibres see G.A.Bravo, *Il mangrovie della Somalia Italiana*, «Annali di chimica applicata» 1936, pp. 527-32; D. Carbone, *Sulla macerazione microbiologica di alcune piante africane*, «Tinctoria» 1936, pp. 257-9; G. Mangano, *Il problema cotoniero nell'AOI*, «Bollettino della cotoniera» 1936, pp. 543-52; V. Carocci Buzi, *Il cotone e le possibilità dell'Impero*, «Rassegna economica dell'Africa Italiana» 1938, pp. 1097-22; M. Calvino, *L'oro verde dell'Oltre Giuba. Una Sansevieria gigantesca da fibra tessile*, «Italia agricola» 1937, pp. 249-54; G. Caradonna, *Utilizzazione dell'alfa e dello sparto libico*, extract from «Rassegna economica dell'Africa Italiana», October 1939; V. Carocci Buzi, *Le piante da cellulosa nella Libia*, «Rassegna economica dell'Africa Italiana» 1937, pp. 1312-23.

⁷³ See *La costruzione dell'Impero...*, quote, vol. 4, p. 1126.

⁷⁴ On the woods of that region see M. Dei Gaslini, *Le ricchezze del Galla-Sidama: foreste, boscaglie, savane, riserve d'autarchia*, Milano, Tip. del Popolo d'Italia 1940.

⁷⁵ See *La costruzione dell'Impero...*, quote, vol. 4, p. 1129.

try. They could substitute the imported essences, mainly the quebracho from Argentina⁷⁶. Bananas, which had been cultivated and marketed long since by the Banana Monopoly Royal Company, were by far the main export item⁷⁷. Italy only managed to get two things out of the Ethiopian wildlife: the above-mentioned hides and coffee. The Ethiopian coffee, studied by several researchers (as well as cocoa)⁷⁸, turned out to be of a very good quality and the government decided to use it in the export-for-currency exchange, leaving Italians with barley coffee. With the help of the Italian Company for the Enhancement of the Ethiopian vegetation, promoted by Morselli, the Italian pharmaceutical industries started – unsuccessfully – several researches concerning the already known spontaneous and cultivated vegetation for its possible use for resins, varnishes, gums, essences, drugs, arousing new hopes in those scholars who had been always encouraging this kind of efforts in the colonies⁷⁹.

⁷⁶ The problem of autarky in the tanning industry was one of the utmost urgency, also because the army was interested in the treatment of hides, and several scientists (the most important of them was Vittorio Casaburi, director of the Experimental station for Tanning) studied this matter. See E. Ageno Valla, *Lo stato attuale della chimica e della tecnica nell'industria della concia*, «La chimica e l'industria» 1936, pp. 298-304; G.A. Bravo, *Il mangrove della Somalia Italiana*, «Annali di chimica applicata» 1936, pp. 527-32; V. Casaburi, *Concia al ferro*, «La chimica e l'industria» 1936, pp. 229-31; L. Sarcoli, *Il cuoio artificiale (cuoio rigenerato «S.A.L.P.A.»)*, «Il chimico italiano» 1936, pp. 137-9; V. Casaburi, *Valorizzazione di pelli vive e morte*, Napoli, Tip. Cesca 1937; Id. *L'autarchia nell'industria del cuoio*, «Bollettino della R. Stazione sperimentale per l'industria delle pelli e delle materie concianti» 1937, pp. 219-30; A. De Pilippis, *La corteccia di acacie come materia tannante; sua importanza per l'Italia e per l'Impero*, «Alpe» 1937, pp. 313-22; G.R. Giglioli, *Le acacie e le altre piante tannifere nel Sud-Africa*, «L'agricoltura coloniale» 1937, pp. 401-21; C. Schiaparelli, *La chimica del cuoio in tempo di autarchia*, «La chimica e l'industria» 1940, pp. 379-81.

⁷⁷ Of the 62.328.000 liras exported by the colonies in 1938 in pineapples and bananas, 62.249.000 came from Somalia.

⁷⁸ F. Weigelsperg di Caneva, *La valorizzazione del caffè etiopico*, «Rassegna economica dell'Africa Italiana» 1937, pp. 1731-42; F. Cortesi, *Il caffè etiopico*, «Annali dell'Africa Italiana» 1938, pp. 981-91; R. Ciferri, G. Barbensi, G. Scaramella, *Analisi biometrica del caffè in grani dell'Africa Orientale Italiana*, «Rivista di biologia coloniale» 1940, pp. 153-65; *Il caffè dell'Impero*, «Annali dell'Africa Italiana» 1938, pp. 1035-60 (this is the report about the outcomes of a mission led by Felice Venezian on behalf of the Italian Company of Coffee Importers); B. Sabadini di Rovetino, *Autarchia agricola. Il cacao nelle terre dell'Impero*, «La nuova scuola italiana», 17 ott. 1937, n. 2, pp. 15-16.

⁷⁹ E. Afferni, *Sulla composizione dell'incenso Majdi della Somalia*, «Annali di chimica applicata» 1937, pp. 373-81; F. Trost, *Sugli ossiacidi triterpenici dell'incenso somalo*, *ibid.* 1937, pp. 178-188; I. Ubaldini, *Caratteristiche chimiche e fisiche principali del grasso originario e d'idrolisi della noce di Palma Dum*, *ibid.* 1938, pp. 191-99; P. Rovesti, *Le materie prime aromatiche ed essenziali dell'Impero in rapporto al piano autarchico nazionale*, «Materie prime d'Italia e dell'Impero» 1939, pp. 474-9. Paolo Rovesti, director of a few perfume companies, was probably the main Italian expert in the industrial use of herbs and had been claiming for a while that it was necessary to exploit the vegetation of the colonies, see P. Rovesti, *Studio sugli olii eterei estratti dalle principali piante aromatiche spontanee della Colonia Eritrea*, «Annali di chimica applicata» 1927, pp. 553-70; Id., *L'industria italiana dei profumi sintetici e dei costituenti di essenze*, «Rivista italiana delle essenze e profumi» 1935, pp. 67-101; C. Alberti, *Ricerche sul Capsico della Somalia italiana*, «Annali di

The Ethiopian «green gold» was also given the nearly impossible task to provide the fuel needed for the vehicles operating in the colonies. The colonial administration had long since started researches about possible alternative sources of fuel. In 1935 the Government of Libya had nominated a special commission for the study of the use of alcohol as fuel. The commission had scrupulously examined asphodel-issued alcohol, but its conclusions were negative⁸⁰. The constitution of the Empire rekindled the interest about this problem and many discussed the possibility of exploiting the African vegetation to obtain alcohol, fuel or slack from Ethiopian euphorbium, peanuts or cereals. As a matter of fact, the gas-producing plant had a limited use and imported petrol and naphtha remained the main fuel⁸¹.

As you can see in the few pages above and in the related bibliography, many scientists and technicians committed themselves to matters of agriculture and stock-breeding in the colonies. If almost all of these initiatives proved to be unsuccessful, it can't be ascribed to the lack of engagement of the researchers. Italians went to Ethiopia knowing almost nothing and the first explorations couldn't do anything but highlight problems that were previously unknown. Once these problems came to be known, there simply was no time to find a solution to them, even supposing that a solution existed.

6. Conclusions

The conquest of Ethiopia involved a significant part of the Italian scientific and technical community in different ways. Suffice it to say (in addition to my previous observations) that on occasion of the annual meeting of the Italian Society for the

chimica applicata» 1939, pp. 392-402; I. Ubaldini, L. Bissi, G. Bissi-Turco, *La palma Dum dell'Eritrea come fonte di materie prime per industrie chimiche*, in *Atti del X congresso internazionale di chimica*, quote, vol. 5, pp. 731-40; R. Ciferri, *L'Africa Orientale Italiana centro d'evoluzione di piante coltivate*, estratto da «Rassegna economica dell'Africa Italiana», luglio 1939; A. Bruno, *La flora etiopica e i surrogati della guttaperca*, «Rassegna economica dell'Africa Italiana» 1937, pp. 1324-32.

⁸⁰ See ACNR, b. 352, f. 1.

⁸¹ S. De Capitani, *Possibilità di produzione ed impiego di carburanti sussidiari nell'Africa Italiana*, «Materie prime d'Italia e dell'Impero» 1937, pp. 711-9; G. Castelli, *Un nuovo carburante nazionale*, ibid. 1938, pp. 15-6; G. Trolli, *Autarchia imperiale. Olii e petroli vegetali*, ibid. 1938, pp. 165-171; V. Bolcato, *L'alcool carburante da alcuni cereali dell'Africa Orientale Italiana*, «Industria saccarifera italiana» 1936, pp. 365-8; G. Coppa-Zuccari, *Carburanti nell'Africa Orientale*, «Rivista italiana del petrolio», 1936, n. 33, pp. 6-8; n. 36, pp. 5-8; A. Merendi, *Alcuni aspetti del problema della produzione e dell'impiego dei carburanti di origine vegetale nelle Colonie italiane*, «Atti Geografici» 1936, s. IV, vol. 2, pp. 81-97; S. De Capitani, *Possibilità di produzione e di impiego dei carburanti sussidiari nell'Africa Italiana*, «Materie prime d'Italia e dell'Impero» 1937, pp. 711-9; I. Ubaldini, *Caratteristiche chimiche e fisiche principali del grasso originario e d'idrolisi della noce di Palma Dum*, «Annali di chimica applicata» 1938, pp. 191-99. Windpower drew some attention, too, see S. Panunzio, *Utilizzazione dell'energia del vento in Tripolitania*, *Atti Sips. XXV riunione. Tripoli* 1936, vol. 5, Roma 1937, pp. 133-73.

Progress of Science, held in Tripoli in November 1936 and dedicated to «the question of the Italian empire», about 500 scientists took upon themselves the fatigue and the expenses for the travel to Africa.

Of course, it is very hard to estimate with some precision the consent of scientists and technicians to the Ethiopian endeavour. There were obedient performers, supporters, propagandists, organisers, innovators, opportunists and sincere enthusiasts. However, all those who participated showed that they realised that researching problems related to the colonies wasn't like any other scientific activity, but it required a personal commitment to the overall fascist project of the empire. It was required to feel part of an army that was building an empire, first through weapons and then through science. The scientist couldn't devote himself just to a sheer and disinterested search for truth, but had to answer his motherland's call to arms. He had to become a militant scientist for the wealth and glory of his nation. I think the words used by Giotto Dainelli to describe his feelings during his exploratory mission in the Lake Tana region portrait, although emphatically, a common feeling: «As I was leading our long and heavy column – which had something warlike in its rifle barrels lined on the vehicles and its roaring motorcycle escorts –, jolting on the bumpy road [...] I felt that our science was really a militant science, at our country's service. I always thought that science should be like this and I always tried to act this way»⁸².

⁸² Giotto Dainelli, *La missione di studio al lago Tana*, quote, p. 17.