The "Real Academia das Sciencias de Lisboa" and the adventure of Pierre Auguste Broussonet, a pioneer of Brazil's Ichthyology and of the scientific relationships between Portugal and France

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ASTRACT
Pierre Auguste Broussonet appears to be the first researcher engaged in the study of the fishes from the Portuguese collections on Natural History, and especially the Royal Museum of Ajuda collections, including the utmost important one collected in Brazil by Alexandre Rodrigues Ferreira. He also dealt with the collection of fishes from the Royal Academy of Sciences, the institution that supported him during his stay of approximately four months in Lisbon, where

he arrived sometime in September or October 1794. An experienced Naturalist, especially on Ichthyology, he produced a pioneer work on an entirely unknown collection, that of the Royal Academy of Sciences of Lisbon. This collection had certainly been transferred from the Royal Natural History Museum at Ajuda. Our present status of knowledge is largely based on documents from the Bibliothèque Centrale of the Muséum national d'Histoire naturelle, Paris. The document on fishes from the Academy's Museum (Table 3) is evidence for the intervention of Broussonet. This document is therefore and by far the more important one as far as Broussonet's intervention is concerned. Broussonet is thus a remarkable pioneer of the scientific cooperation between Portugal and France.

KEY WORDS
Academy,
Broussonet,
Brazil,
Ichthyology,
Portugal,
France.

RÉSUMÉ

La « Real Academia das Sciencias de Lisboa » et l'aventure de Pierre Auguste Broussonet, pionnier de l'Ichthyologie du Brésil et des rapports scientifiques entre le Portugal et la France.

Pierre Auguste Broussonet semble avoir été le premier chercheur à avoir étudié les poissons appartenant aux collections portugaises d'Histoire naturelle, et notamment celles du Musée Royal de Ajuda, qui comprenaient les très importantes collectes faites au Brésil par Alexandre Rodrigues Ferreira. Broussonet a observé en outre le matériel ichthyologique de l'Académie Royale des Sciences, institution qui l'a aidé pendant son séjour d'environ quatre mois à Lisbonne, où il est arrivé entre Septembre et Octobre 1794. Naturaliste expérimenté, surtout en Ichthyologie, il a effectué un travail pionnier sur la collection de l'Académie, qui demeurait inconnue. Cette collection a dû avoir été cédée par le Musée de Ajuda. L'état actuel de nos connaissances sur l'activité de Broussonet est basé en grande partie sur des documents de la Bibliothèque centrale du Muséum national d'Histoire naturelle à Paris, notament le document sur les poissons du Musée de l'Académie (Tableau 3). Broussonet est ainsi un pionnier remarquable de la coopération scientifique entre le Portugal et la France.

MOTS CLÉS
Académie,
Broussonet,
Brésil,
Ichthyologie,
Portugal,
France.

INTRODUCTION

Ignorance, omissions and lack of general diffusion have shown Portugal as a near desert as far as the creation of scientific knowledge is concerned before the reign of King José I (1750-1777). However, meaningful scientific contributions have been made. Most only recently have been valued again.

A leading role has been that of Sebastião José de Carvalho e Mello (1699-1782), better known as the Marquis of Pombal, a title granted by José I. However many progressive "pombaline" measures have been rendered fruitless by lack of an adequate labour force as many elements of the Portuguese intellectual class had been forced to flee Pombal's cruel dictatorship.

After the accession of Queen Maria I and the demise of Pombal there were new developments. The much "softer" regime allowed the return from abroad of many qualified persons. The economic development of then is related to political change, which had deep consequences. One of these was the creation (24.XII.1779) of the "Real Academia das Sciencias de Lisboa" under the patronage of the Queen and the leadership of the first President, João de Bragança (6.III.1719-10.XI.1806), the Second Duke of Lafões, helped by several people including the Abbot José Francisco Corrêa da Serra (6.VI.1750-11.XI.1823).

The study of the collections at the Academia das Ciências de Lisboa Museum has been undertaken

by one of us (Miguel Telles Antunes) since 2000. The only meaningful part then known was a collection of Physics instruments plus the Brazilian ethnographic specimens collected during the great expedition (1783-1792) led by the Portuguese Naturalist, Alexandre Rodrigues Ferreira (1756-1815).

Much to his surprise, M.T.A. found at the Academy's Museum a lot of dried, "herbarium" – cardboard mounted fishes – from the same expedition. It is but a remnant of the original collections. Obviously it had not been chosen by Étienne Geoffroy Saint-Hilaire, Professor at the Muséum national d'Histoire naturelle, Paris (May 1808), during his mission in Portugal. He benefitted from the departure to Brazil of the Prince Regent just prior to the French army's arrival in Lisbon (29.XI.1807) in the first Napoleonic invasion of Portugal (1807-1808). The remaining Portuguese Government was immediately replaced by a Governorship led by the General Jean Andoche Junot, who granted Geoffroy full powers to requisition all he wanted (Antunes 2011).

The whole situation created by Geoffroy's requisitions mainly concerns specimens from widely scattered areas that belonged to the Ajuda Palace collections. These collections underwent the effects of time, poor maintenance and losses, either through the Saint-Hilaire requisitions or several transfers as those to the Coimbra University and to the newly-created Museum of Rio de Janeiro. Other transfers took place to the building of the former Jesus monastery, extinct in 1834 and then granted to the Academy by Queen Maria II (1819-1853). Poor conservation, lack of space and of other means were presented in order to justify a further transfer to the Escola Politécnica in Lisbon *c.* 1860 – where they met a sad end in a set fire (1978).

Nevertheless, the Museum of the Academy was not entirely depleted; some specimens were left over, maybe to be shown to the students that frequented the courses held at the Academy.

A large part, comprising the most interesting specimens and not just doubles, as it has been said, was dispatched to Paris by Saint-Hilaire. The remaining fishes have been left at the Academy of Sciences when zoological and mineralogical collections were transferred to the Escola Politécnica, maybe because the "herbarium" technique, then obsolete, was devoid of interest.

After at least 140 years, cleaning and treatment were accomplished. We could then study the sample in order to obtain an accurate identification and updated nomenclature for all specimens (Antunes 2003, 2007; Antunes & Balbino 2003).

MATERIAL AND METHODS

The present study mainly concerns the pioneer contribution by Pierre Auguste Broussonet to collections of fishes, both from Brazil and from Portugal, then kept at Portuguese institutions in Lisbon, the Royal Cabinet at Ajuda and the Museum of the Royal Academy of Sciences. This occurred during his brief stay in Lisbon and can be recorded as one of the first scientific contributions by French men of Science to Portugal. General unfavorable occurrences happened meanwhile: political change, insufficient care, losses from Étienne Geoffroy Saint-Hilaire's exactions (1808), poor economic conditions, civil war, transfers of collections to the building granted to the Academy in 1834 and from there to the "Escola Politécnica" (since 1911 converted into the Faculty of Sciences, Lisbon University), and a great fire there (1978). All this resulted in the loss of most of the concerned collections. We have taken basically into account the surviving specimens at the Academy's Museum, some of the Saint-Hilaire's specimens at the Bib Centr of Paris Muséum, and documents, most of them from the Bibliothèque Centrale of the same Muséum. Detailed identification of "herbarium" mounted fishes had been done (Antunes & Balbino 2003). Emphasis is given therefore to historic aspects and not to the detailed nomenclatural aspects; i.e. we did not need to surcharge the following Tables by including the initials of the larger taxonomic categories according to Linné's classification (P, Th, etc.), which have been stated in the original documents. For common names, we mainly consulted the broad scope works by Ihering (2002) for Brazilian ones and Saldanha (1995) for Portugal's.

Fig. 1. — Auguste Broussonet, a medicine doctor.

Who studied the fish specimens?

One source of data is the collection of dry, Brazilian fishes at the Academia das Ciências Museum. They show names in Portuguese and in a Brazilian native language that may have been written by Rodrigues Ferreira.

However, somebody added above in a different calligraphy a Latin name for each specimen. The author of these classifications was certainly an accomplished ichthyologist. We firstly thought it had been Geoffroy Saint-Hilaire or someone else under his direction because he praised his own contribution, undoubtedly to show it as a beneficial rendering of services to Portugal. This was used to justify the infamous requisitions as just simple exchanges between museums (see Antunes 2007).

Later developments casted doubts on this. Portuguese manuscripts kept at the Bibliothèque Centrale, Muséum national d'Histoire naturelle, Paris, i.e. Ms 2441 and 2442 (especially the former) depict a different situation. Even if they do not bear any signature, they can be ascribed to Félix de Avellar Brotero (1744-1828), Professor at the Coimbra University and Director of the Ajuda Museum since 1811 until his death.

Research on the late 18th century in Portugal and especially on the Police's Intendente-Geral Diogo Inácio de Pina Manique's reports to his Minister helped to clear up this problem. Indeed, a French revolutionary suspect had been detected in Lisbon in the circles around the Duke of Lafões. The calligraphy on the fish cardboards was compared to that of letters written by a French citizen who was no other than Pierre-Auguste-Marie Broussonet (born and deceased in Montpellier, 19.I.1761-27. VII.1807). However, even in the case of Broussonet's intervention the writing could have been done by someone else.

Hence, we were led to suspect that Ferreira's specimens could at first have been studied by Broussonet, later on selected and partly taken away by Saint-Hilaire, and still later referred to by Brotero. It is therefore most interesting to know Broussonet, his life and work as far as Portuguese collections are concerned.

Broussonet´s life events until 1795 and their context

According to the available data (Caillé 1972), the following succession of events will be presented.

Pierre Broussonet was a doctor of medicine and renowned ichthyologist, and a botanist afterwards (Fig. 1). He was a Girondin. This brought him great dangers; he even was imprisoned and risked death at the guillotine. In his later years his health became poor: his case was much studied because he acquired an aphasic status as a consequence of an apoplectic stroke.

Let us recall the following aspects of his often adventurous life and explain his fruitful, few months' stay in Portugal.

1779. — His *Mémoire sur les différentes espèces de chiens de mer* is presented to the Société Royale des Sciences de Montpellier (Broussonet 1779).

1780. — Broussonet concluded his M. D. studies when he was only 18 years old. Shortly after

he travelled to London, where he became a friend of the President of the Royal Society, Sir Joseph Banks, who let him study a collection of fishes mainly collected during the first (that of the HMS Endeavour) and second expeditions led by James Cook (1768-1771, 1772-1775).

Broussonet wanted to fulfill a very ambitious task, i.e. the description according to Linnean systematics of all the *c.* 1200 fish species so far known. Only a small part of this was done.

1781. — Elected a Member of the Royal Society of London.

5.VII.1781. — His study on *Ophidium barbatum* is presented by Banks to the Royal Society.

1782. — Broussonet publishes the first (and unique) volume, dedicated to Sir Joseph Banks, of the great work he was planning. He described ten species depicted in high-quality engravings (Broussonet 1782) (Fig. 2).

1782. — Becomes Adjoint of Daubenton, Professor at the Muséum national d'Histoire naturelle, Paris.

1784. — A rather free traduction of a humoristic, natural history, anticlerical, mocking the church and especially on monachology, Linné's classification and latin book by Ignaz von Born (1783) is published under the title *Essai sur l'histoire naturelle de quelques espèces de moines décrits à la manière de Linné, Ouvrage traduit du latin et orné de figures par Mr. Jean d'Antimoine* (a Broussonet's pseudonym), see Levacher (2011).

1785. — Elected a Member of the Académie des Sciences, Paris.

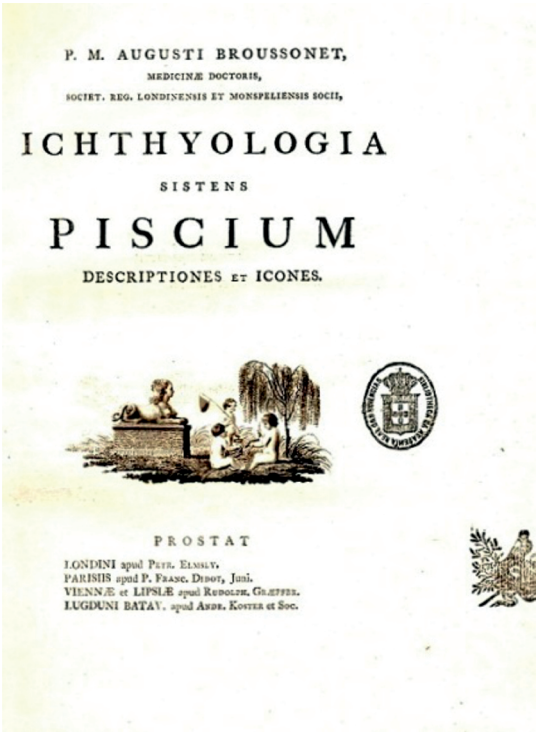
1785-1786. — His very intensive research activities are focused on Ichthyology. His works, presented at the Académie des Sciences, Paris, were published at the *Mémoires de l'Académie des Sciences* and the *Journal de Physique*. Afterwards. Broussonet seems entirely occupied in politics.

23.VI.1789. — The French Assemblée Constituante began its activities, pursued until 30.IX.1791.

14.VII.1789. — The Bastille prison in Paris is taken by the mob.

I.X.1789. — The Assemblée Législative is active until 20.IX.1792.

X.1789. — Foundation of the extremist Club des Jacobins.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PISCIUM
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PROSTAT
LONDINI apud PETR. ELMSLY.
PARISIIS apud P. FRASC. DIDOT, Juni.
VIENNÆ et LIPSLÆ apud RUDOLPH. GRAEFFER.
LUGDUNI BATAV. apud ANDR. KOSTER et Soc.

FIG. 2. — *Ichthyologia, Sistens, Piscium, Descriptiones et Icones* (Broussonet 1782). Book was dedicated to Sir Joseph Banks.

1789 – Broussonet is elected to the Assemblée Législative. He became a member of the moderate Girondin party.

20-21.VI.1791. — King Louis XVI tries to escape and is detained at Varennes.

14.IX.1791. — The King accepts the 1791 Constitution.

31.X.1791. — Decree against the "émigrés".

23.III.1792. — A Girondin Ministry is empowered, only to be ousted 13.VI.

10.VIII.1792. — Fall of Louis XVI. Government is ensured by a six-member of the Conseil Executif Provisoire led by Georges Jacques Danton (1759-1794), the leader of the extremists called the Montagnards.

2-6.IX.1792. — Numerous slayings occurred, following the fierce demagoguery of Jean Marat (1743-1793). Many Girondins were executed.

21.IX.1792 - 26.X.1795. — The Convention Nationale replaced the Assemblée Legislative. It

came to power under the prevailing party of the Montagnards. Danton, Marat, Robespierre and Saint-Just ruled through the Terror.

21.I.1793. — Louis XVI is guillotined.

6.IV.1793. — A nine-member (next 12.VII.) Comité du Salut Public directed by Robespierre ensures the coordination of the Government.

31.V.-2.VI.1793. — The Girondins fall in disgrace. The new regime was called the Terror. Most of the Girondins were guillotined in October 1793: in Paris alone the rhythm of the executions was nearly 38 persons per day, all days.

Broussonet quit Paris.

Meanwhile, French refugees went to Lisbon; reports arrived. In Portugal, allegedly progressive-minded citizens were in favour of the French Revolution (the so-called afrancesados). "Liberté, Égalité, Fraternité" seduced people who did not grasp the tragedy that really occurred. The vast majority of people would not risk utter violence and death. This justified the precautions taken by the Intendência da Polícia and especially by the Intendente-Geral, Diogo Inácio de Pina Manique.

13.VII.1793. — Marat was murdered.

9.X.1793. — Imprisonment of several persons including "Broussonet, ex-législateur" was ordered by Delbreil, "délégué" in the Hérault Department. Broussonet was jailed.

31.X.1793. — The Comité de Surveillance orders his release on bail. He returned to his house near Montpellier. Meanwhile, disturbing news arrived on the development of the Terror. Certainly afraid of being jailed again and convicted to death, he decided to quit France (winter of 1793-1794).

37.III.1794. — Broussonet leaves Notre-Dame de Londres to join his brother Victor at Bagnères-de-Bigorre.

5.IV.1794. — Execution of Danton.

10.VI.1794. — The Great Terror begins.

VII.1794 and after. — Broussonet still remained at Bagnères (10.VII.)

18.VII.1794. — Broussonet escaped through the Brêche de Roland when herborizing in the Gavarnie area and entered Spain. He spent 15 months outside France.

20.VII.1794. — A patrol was sent to look for Broussonet, but lost all traces from him at the Brêche de Roland and did not go further because of Spanish guards.

26.VII.1794. — The Argelès Revolutionary Committee writes to the Montpellier District: "Citizens, the infamous Broussonet, …, disgusted of breathing the pure air of the liberty, just left [July 19th] the lands of the Republic to live between the slaves and fanatic Spaniards". His property would be confiscated.

27.VII.1794. — Robespierre was deposed and, the very next day, sent to the guillotine.

14-15.VIII.1794. — Broussonet is registered on the "tableau des émigrés". His Paris flat with his books, manuscripts and collections was sealed.

18.VIII-17.IX.1794. — His sisters addressed to the Convention Nationale a petition asking their brother's name to be eliminated from the list of the"émigrés". The Committee of the Convention suspended its former decision.

2d half of VII.1794. — His voyage to Madrid is poorly known. The following account may not be entirely accurate.

After passing through the Brêche de Roland, Broussonet spent two days wandering in the mountains until a shepherd led him to the village of Fanlo. Here he met a patrol that took him to "Bio" (Bielsa?), whose "alcalde" led him to "Venasque" (Benasque); he was allowed to proceed to Madrid. If the distance was about 600 km, and admitting a 15 km/h speed during 8 hours a day (or *c.* 120 km per day) for a stagecoach, the whole trip would take about 5 days. Broussonet seems to have arrived in Madrid by 26.VII.

End of VII-VIII.1794. — In Madrid, Broussonet was well received by the botanists Cavanilles and Ortega. He was lodged at the latter's home. Being informed about Broussonet (and this requires the time to send a letter from Madrid to London and to receive its corresponding reply), Sir Joseph Banks granted him an unlimited credit and obtained an order issued by the British Admiralty to convey him to England.

Hostility by French "émigrés" may have led him to proceed to Cádiz in order to return to London, where he was sure of Banks' protection. As the distance Madrid-Trujillo-Mérida-Zafra-Venta del Alto-Sevilla-Cádiz is about 658 km, this means about

five and a half days by stagecoach. By comparison, a Lisbon-Oporto trip by stagecoach between 1852 and 1871 took about 34 hours to make 300 km since Carregado if all went normally at the 23 stage changes. Stops could be longer, allowing passengers to eat and/or to stay overnight.

Before 6.XI 1794. — Broussonet embarks for London at Cádiz in a British ship (beginning of September?). In order to escape pursuit by two French frigates, the ship had to seek refuge in the Lisbon harbor. Broussonet disembarks (still in September?) and is welcomed by José Correa da Serra. The latter, in agreement with the Duke of Lafões (President of the Academia Real das Sciencias), lodged the visitor at the house of the Guard of the Academy, then at number 77, Poço dos Negros Street. Correa da Serra was often seen with him, a suspect behavior for Pina Manique.

According to Caillé (1972: 64), Broussonet learned Portuguese and translated into French several unpublished reports on Portuguese travels in South America. These may concern the great expedition (1783-1792) led by Alexandre Rodrigues Ferreira, who had returned quite recently from Brazil. However such a remarkable performance is hard to believe, even for someone as Broussonet that knew French, Latin, English, maybe the Languedoc language and Spanish too.

6.XI.1794. — Pina Manique reports to the Marquis of Ponte de Lima, the Secretário dos Negócios da Fazenda (Amaral 2009: 3): *"*at noon, the Praça do Comércio was attended by certain people which required police vigilance, and among them 'a Frenchman' that had been imprisoned at Limoeiro [a prison in Lisbon], the Abbot Correa da Serra, a special friend of the minister (Colonel Humphreys) and of the Consul (Edward Church) of the United States of America, and that they used to go 'to the house of the Duke [from Lafões]' (…) and all joined together at a farm at Braço de Prata, named of the 'Alfinetes' [pins], where other people came". The north-American diplomats were "two republicans (…) utterly dangerous and famous 'frimaçons' at the Master's degree" because they had, *"without any hesitation, their hearts at the National Convention in Paris"*. In the same document were referred the names (…) of the naturalist Pierre Broussonet (…)". Hence, it is clear that Broussonet was in Lisbon sometime before this date.

19.XI.1794. — Pina Manique reports that "such persons would be 'spies that the National Convention' of France had in Lisbon, "in order to inform pirates to arrest the interesting ships and liners (…) of all the allied nations" (Amaral, ibidem). The presence in Portugal of Broussonet, a "Jacobin and free mason", was "nuisible to His Majesty's service and the public tranquility" (Amaral 2009: 4). Furthermore, Correa da Serra, that according to Manique "was indeed a very dangerous man", was the target of negative reports that became even worse after the arrival of Broussonet, "one of those blood-thirsty members of Robespierre's party" (ibidem). Of course, the information that reached Manique may not have been accurate; on the contrary, the Frenchman could be included among those that fled persecution. Happily enough, Pina Manique apparently did not know about the rather jacobinist 1784 translation by Antimoine (Broussonet's pseudonym), a book that does not exist in the Lisbon Academy of Sciences Library (which had surely been a very dangerous one to bring along then and there). At last, the Intendente stated that "the Abbott [Correa da Serra] travelled through the town in a carriage, accompanied by the Frenchman; that he introduced him in certain places where [he] should not enter; lodged him at the Academy of Sciences of Portugal [sic] as a brother; and that Broussonet stayed "sometimes at the Holy Ghost House with Father Teodoro de Almeida and other times with the Abbott Correa da Serra (…)" (Amaral 2009: 4).

2.XII.1794. — Broussonet wrote a letter from Lisbon where he states: "Je suis logé avec le garde du Cabinet de l'Académie des sciences au milieu de ce cabinet et d'une bonne bibliothèque". Nothing appears as fearful.

This is not what is told by Cuvier and Candolle (Caillé 1972: 64-65). Both report that Broussonet's displacements were a consequence of the hostility of French royalists. According to them, these "émigrés" regarded him as a dangerous revolutionary. They would have contributed to force him to quit Madrid. In Portugal, hostile persons are even said to have asked for the intervention of the Inquisi-

tion under the pretext that he was a franc-maçon, and even that the Duke of Lafões, his protector, was in favour of jacobinism (ibid : 65).

This seems utterly false and redacted so as to impress French people. First, because there are no known records of any Inquisition process concerning Broussonet; second, he was surveyed, yes, but by Pina Manique's Police; third, it looks as just an excuse to strike once more against Catholicism and the Inquisition. Or, as a consequence of the Government headed by the Marquis de Pombal (which ended in 1777), the Inquisition had lost all his former great influence. It was reduced to a simple, disciplined State court.

Protestants (as Cuvier) and others maligned it again and again – forgetting, of course, even more grave events. What to say about the Saint-Barthélemy's Massacre in Paris and elsewhere in France, even if there was no Inquisition, when in a single night thousands of Protestants were slain? This is a striking contrast with Portugal, where the Inquisition was responsible for 146 executions by fire between 1684 and 1747 (63 years or 2.3 per year), and afterwards at an even lower pace until the last one in 21.IX.1761 – that of the Jesuit, Gabriel Malagrida for postures against Pombal.

As Caillé (1972: 66-67) states after Philippe Durand, friend and collaborator of Broussonet, "Il faudrait vouer à l'exécration ces Français fugitifs que M. Cuvier (Éloge prononcé à l'Institut le 4 janvier 1808) représente comme acharnés à poursuivre un compatriote infortuné, sans appui, sans ressources et dénué de tout (…) Par bonheur pour l'humanité, de tels monstres n'ont jamais existé. Ceux à qui l'on fait jouer gratuitement un rôle si odieux, ont compati à ses malheurs, et plusieurs d'entre eux se sont empressés de lui être utiles !". Maybe some Frenchmen were not sympathetic towards him while other ones were helpful.

20.VI.1795. — James Simpson, USA Consul at Gibraltar, arrived at Tangiers (Morocco) accompanied by Broussonet in the role of Medicine Doctor. Simpson had been charged of a mission to the Cherifian Empire and the sultan Moulay Sulayman (1207-1238 A.H. / 1793-1822 A.D.).

28.VI.1795. — In Rabat, Broussonet makes a written statement at the French Consulat (Caillé 1972 : 68-69), in which he seeks to justify his actions under a "politically correct" manner, in order to be able to return to France.

His departure as an M. D. for the American diplomatic mission to Morocco may not have resulted from previous encounters in Lisbon with American diplomats. He just got a job that was interesting for him, even more because he could deal with French representatives under American protection. He pleads his devotion to the Republic, to the liberty, equality, etc. against the awful Robespierre tyranny when every day there were hundreds who perished after judgements without any kind of process. He further declares that he tried to emigrate to the United States but lack of means and fear for being captured in the sea prevented him from doing it.

According to the same declaration, Broussonet travelled through Spain and Portugal *"étranger à tous les émigrés qui m'ont persécuté de toutes les manières et ont suscité contre moi jusqu'au tribunal de l'inquisition de Lisbonne"* (Caillé 1972: 70). Again a statement adequate for pleasing politicians. As Caillé (1972: 71) says, "Broussonet n'oublie pas de dire qu'en Espagne et au Portugal, il a été persécuté par les émigrés. Toutefois, il le fait brièvement et l'on peut croire, (…) que ces persécutions n'ont pas été aussi violentes qu'on l'a dit. [Our underline]. Mais il ne fallait à aucun prix qu'il put être confondu avec les royalistes qui avaient fui leur patrie; même s'il a eu des rapports corrects avec certains d'entre eux, il devait les cacher." We fully agree. The very intensive work he carried on during his quite brief, *c.* 4 months stay in Lisbon does not at all seem compatible with a situation of harassment and great danger.

28.I.1795. — His aim to immigrate to the United States is not surprising if account is taken of his relationships with the American diplomats in Lisbon. He left Portugal for Gibraltar and from there to Tangier in Morocco, apparently for a brief stay.

8.III.1795. — The Girondins are convocated and once again obtain political influence. This change is favourable to Broussonet, who is allowed to retun to France somewhat later.

26.X.1795. — The Directoire is in power.

III(?).1795. — Broussonet's departure was followed shortly after by the escape of Corrêa da Serra, who was under police vigilance. Owing to his

TABLE 1. — Identified species in the assemblage of "herbarium" fishes from the Alexandre Rodrigues Ferreira collection kept at the Museum of the Academia das Ciências de Lisboa (Antunes & Balbino 2003). Abbreviation: **No.**, number of specimens (original reference).

			Common names	
No.	**Old scientific name**	**Updated scientific name**	**Original Names**	**Names in use**
1 (15)	-	*Rhizoprionodon porosus* (Poey, 1861)	–	Trisqueira
1 (12)	*Squalus*	*Carcharhinus porosus* (Ranzani, 1839)	–	Cação-do-fundo
1 (14)	*Squalus tiburo*	*Sphyrna tiburo* (Linnaeus, 1758)	Cação Martello, Papana	Peixe-martelo
2 (♂, 106; ♀, 105)	*Raja* Puraquê	*Rhinobatos percellens* (Walbaum, 1792)	Puraquê	Viola
1 (133)	*Labrus laevis*	*Cynoscion acoupa* (Lacepède, 1801)	Pescadinha	Pescada-amarela-marinha, pescada-dourada
2 (79)	*Scomber coeruleus*	*Pomatomus saltatrix* (Linnaeus, 1766)	Olhete	Anchova de banco
1 (24)	*Chaetodon triostegus*	*Chaetodipterus faber* (Broussonet, 1782)	Enxada, Puareruá	Paru
1 (65)	*Perca guttata*	*Epinephelus itajara* (Lichtenstein, 1822)	Mero cupuguassú	Cupuguassu
1 (119)	*Perca atrorubra*	*Epinephelus flavolimbatus* Poey, 1865	Garoupa de S. Thomé, Piraumbú	Garoupa-de-São-Tomé
1 (139)	*Perca glabra*	*Mycteroperca rubra* (Bloch, 1793)	Badejo, Piratiquá	Badejo
1	*Sparus variegatus*	*Lutjanus purpureus* (Poey, 1876)	Vermelho, Caranha	Caranha, pargo
2 (121)	*Fistularia tabaccaria*	*Fistularia tabacaria* Linnaeus, 1758	Trombêta, Petumbuaba	Petimbuaba
1 (120)	*Muraena*	*Gymnothorax nigromarginatus* (Girard, 1858)	–	Moreia

importance, it deserves a reference here. Corrêa da Serra still was in Lisbon Sunday 15.III.1795, date of a brief letter from the Duke of Lafões (Ms 2442, Bibliothèque Centrale of the Muséum national d'Histoire naturelle, Paris) to a Medicine Doctor:

"Mr. Dr. for some days I wish to talk to you without success, and today I still need it even more. I ask you to come for a moment to this headquarters, and for this purpose I will send a coach, and when you arrive please let yourself be announced somewhat cautiously, because I wish to speak to you before you see our Abbot that today is more out of reason with me than ever before (…)" (Our translation from Portuguese).

Another chronological reference is the Duke's moving reply 22.V.1795 to a (unknown to us) letter sent from London by Corrêa da Serra:

"Your Honour calls me your Friend; that is enough; you give me a further title [he was the 2d Duke of Lafões; the 4th Marquis of Arronches; the 6th Count of Miranda; the 32th Lord of the House of Sousa – 9th century onwards]; it was not needed, and even more when you write me from a Country where value is given not to nobility but to merit and friendship. All of this you have found in Mister Banks, and even if Your Honour and he himself in his letter ensure me that nothing will be wanting to you being his guest; …" [Our translation from Portuguese].

Corrêa da Serra therefore fled between late March and the beginning of May 1795; other authors say "March 1795". In London, Correa da Serra was received by Sir Joseph Banks, who lodged him at his own Soho Square home.

5-26.X.1795. — Broussonet returned to Montpellier.

Since we have no evidence of any further connections by him to Portugal, subsequent events related to Broussonet are not of interest here.

BROUSSONET'S CONTRIBUTION AND SUPPORTING DOCUMENTS

Lodged at the Real Academia das Sciencias de Lisboa, Broussonet was in good conditions to study its collections. As he moved around Lisbon, he certainly saw the Royal Ajuda Museum, where was located the most important collection from Brazil sent by Alexandre Rodrigues Ferreira. It is most probable that his interest would mainly be the ichthyological material he tried

TABLE 2. — Fishes from the coast of Lisbon, Portugal Brotero papers, Ms 2441/ Bibliothèque centrale, Muséum national d'Histoire naturelle, Paris; probably an annex to the Catalogo, Do Real Museo. Names as written in the document. Data from Albuquerque (1956) and Saldanha (1995).

	Common names		
Scientific names	**Ancient**	**Extant, if different**	**Remarks**
Muraena Linnaeus, 1758	Murea	Moreia	with no specific name
Uranoscopus scaber Linnaeus, 1758	Charroco	–	maybe *Halobatrachus didactylus* (Bloch & Schneider, 1801) or *Acanthocottus scorpius* (Linnaeus, 1758)
Gadus Pollachius (Linnaeus, 1758)	Bacalháo	Bacalhau	*Gadus pollachius* (Linnaeus,1758)
Scorpaena Porcus (Linnaeus, 1758)	Cantarilho	Rascasso	*Rascasso*, *Scorpaena Porcus* Linnaeus, 1758; or *Cantarilho*, *Helicolenus dactylopterus* (Delaroche, 1809)
Zeus Faber (Linnaeus, 1758)	Peixe-Gallo	Peixe galo	*Zeus faber* Linnaeus, 1758
Pleuronectes maximus (Linnaeus, 1758)	Rodovalho	Pregado /Solha	*Scrophthalmus maximus* (Linnaeus, 1758)
Sparus Aurata (Linnaeus, 1758)	Dourada	–	*Sparus aurata* Linnaeus, 1758
Sargus Fabricius, 1798	Sargo	–	*Diplodus sargus* Linnaeus, 1758 or other species
Sciaena Cappa Linnaeus, 1758	Vezugo	Besugo	*Pagellus bogaraveo* (Brünnich, 1764) or *P. acarne* (Risso, 1826)
Perca Labrax Linnaeus, 1758	Robalo	–	*Dicentrarchus labrax* (Linnaeus, 1758)
without specific name	Peixe Imperador	–	*Beryx decadactylus* Cuvier & Valenciennes, 1829, or *B. splendens* Lowe, 1833
Trigla Linnaeus, 1758, without specific name	Ruivo	–	several spp., as *Trigla lyra* (Linnaeus, 1758)
without specific name	Cabrinha	–	*Trigla* spp.
Tetrodon Mola Linnaeus, 1758	Peixe Rolim/Roda	Peixe-lua	*Mola mola* (Linnaeus, 1758)
Lophius piscatorius (Linnaeus, 1758)	Tamboril	–	*Lophius piscatorius* Linnaeus, 1758
Acipenser Sturio Linnaeus, 1758	Solho de Portugal	Esturjão, Solho-rei	*Acipenser sturio* Linnaeus, 1758. Extinct
Chimæra monstrosa (Linnaeus, 1758)	Peixe coelho	Peixe-rato	*Chimæra monstrosa* Linnaeus, 1758
Squalus Catulus Molin, 1859	Pinta-roxo	Pata-roxa, Gata	*Scyliorhinus stellaris* (Linnaeus, 1758)
Centrina Risso, 1826	Peixe-porco	–	*Oxynotus centrina* Linnaeus, 1758
without specific name	Tintureira	Quelha	monstrous, with two heads, *Prionace glauca* (Linnaeus, 1758)
Squatina Duméril, 1806	Peixe Anjo	Peixe-anjo/ Viola	*Squatina squatina* (Linnaeus, 1758)
Mustelus Linck, 1790	Doninha do mar	Cação, Galhudo	forgotten name; *Mustelus mustelus* (Linnaeus, 1758)
without specific name	Peixe rato	–	*Chimaera monstrosa* Linnaeus, 1758
Raja Torpedo Linnaeus, 1758	Taramelga	Tremelga	*Torpedo torpedo* Linnaeus, 1758 or *T. marmorata* Risso, 1810
Raja Linnaeus, 1758	Ratão	–	without specific name; *Dasyatis pastinaca* (Linnaeus, 1758), *Taeniura grabata* (Geoffroy Saint-Hilaire, 1817) or *Myliobatis aquila* (Linnaeus, 1758)
without specific name	Arraya	Raia or Arraia	*Raja* spp.
Petromyzon marinus (Linnaeus, 1758)	Lamprea	Lampreia	*Petromyzon marinus* Linnaeus, 1758
Syngnatus Acus (Linnaeus, 1758)	Peixe agulha dos Francezes	Agulhinha	*Syngnathus acus* Linnaeus, 1758
Hippocampus Cuvier, 1816	Cavallo marinho	Cavalo-marinho	*Hippocampus guttulatus* (Cuvier, 1829) or *H. hippocampus* (Linnaeus, 1758)
Exocetus evolans Linnaeus, 1758	Voador, Andorinha do mar	Peixe voador	*Dactylopterus volitans* (Linnaeus, 1758)

to classify. Let us recall that there was nearby at the Convento de Jesus an important library that already possessed works by Linnaeus, Buffon and others.

From a zoological viewpoint, Broussonet applied to the fishes the divisions adopted in Linné's *Systema naturae;* according to Jodra (2006), "Broussonet est le premier qui ait appliqué à la zoologie le système de nomenclature de Linné".

Taking into account the new data, some methodological changes were needed. An updated determination was obtained for the fishes in the Academy Museum collection. We tried it for the lists under study. However it is not always possible to recognize species there in a satisfying manner. Old classifications are presented as well as common names that are partly referred to in one of the more comprehensive works on the fauna from Brazil (Ihering 2002). Even so, not all doubts could be eliminated, and even more because there are common names that seem to have fallen into disuse after more than two centuries. Furthermore, spelling differences do not always allow us to be sure of its attribution.

Broussonet's classification is as follows, as we verified in Linné (1767, 1772):

REGNUM ANIMALE
…

CLASSIS III. AMPHIBIA
…

III. NANTES
(Including Cyclostomes, Selaceans and some Actinopterygians)

CLASSIS IV. PISCES
(Comprising the remaining Actinopterygians)

I. APODES

II. JUGULARES

III. THORACICI

IV. ABDOMINALES

Summing up, what we can reconstruct on Broussonet's contributions concerning fishes from Portuguese collections is based on:

1 – The "herbarium"-mounted fishes at the Museum from the Academia das Ciências de Lisboa, which most probably had been transferred from the Ajuda Museum. Our research at the Muséum national d'Histoire naturelle (Paris) was fruitless as far as Broussonet is concerned, although material obtained by Geoffroy Saint-Hilaire was located (Table 1).

2 – The lists of fishes among Brotero's documents referred above (Ms 2441, Bibliothèque Centrale/ Muséum national d'Histoire naturelle, Paris) and especially:

(a) The Catalogo, Dos, Peixes, Do Real Museo" (the Royal Ajuda Museum), 13 pages without any reference to Broussonet. It concerns the contents of the 10 to 13 cabinets where fishes from Portugal, Cabo Verde, Brazil and from unidentified origins were stored. This *Catalogo* is one of 9 notebooks concerning the Ajuda collections, 4 of which being dated 1811 and 1813 – the three first years of Brotero as Director.

(b) The list of *Peixes de Portugal* handwritten by the same person as the *Catalogo*: 2 pages in the same calligraphy and also concerning the Ajuda Museum (Table 2). It contains one important remark about "Peixe mero. Perca guttata do [of the] Broſ-". The last letter being an archaic, very elongate minuscule "s" that we depict as "ſ". It seems an abbreviation of *Broussonet,* even if the "u" is lacking. This reference to the Portuguese "mero" (a large-sized sea-perch) as Perca Guttata BROUss. recalls that of the Brazilian, "herbarium"-mounted fish also classified as Perca guttata (Antunes & Balbino 2003: foto 11). Both show the same classification, probably due to Broussonet.

(c) The handwritten document Peixes, do Museo/ da, Academia on a piece of paper with a field of arms of the Prince Regent and the legends "CAUZA. PUBLICA" above and "80 REIS" below (a piece of paper that represented a tax). With its plentiful references, this is the most important evidence on Broussonet's research activities on Portuguese fish collections (Table 3). As far as we can ascertain, this is the first document that directly deals with the Museum of the Academy, whose very existence is therefore corroborated

TABLE 3. — Fishes from Brazil from the Museum of the Academy according to Brotero. Paper sealed with a Regent Prince type shield of arms; the legend "CAUZA. PUBLICA" above /and 80 REIS (monetary unit) below; no date but 1811 or somewhat later. Note references to Broussonet. Authorships and nomenclatural corrections made by Paul Andreas Buckup. Abbreviations: **A. N.**, amphibia nantes, **Ar**, amphibia regnum animale, **Brouſſ.**, Broussonet, **No.**, Number of specimens (original reference), **P. A.**, **P. Ap.**, pisces apodes, **P. Abd.**, **P. Abdom.**, pisces abdominales, **T.**, thoracici, **P. Th.**, pisces thoracici.

No.	Scientific name in the original document	Updated Scientific name	Common names		
			Old document	Brazilian	Extant
1	P. Th. *Echeneis*	*Echeneis naucrates* Linnaeus, 1758	–	–	Agarrador, rémora
2	P. Th.*Scomber aureus* novus Brouſſ.	*Scomberomorus maculatus* (Mitchill, 1815)	–	Sororoca	Sororoca
3	P. Ap. *Muraena*	Several spp.; *Gymnothorax nigromarginatus* (Girard, 1858) as in the Collection	–	–	Caramuru
4	*Pleuronectes*	Indeterminate	–	–	Linguado
5	Ar *Tetrodon lævigatus*	*Lagocephalus lævigatus* (Linnaeus, 1766)	–	Bayacu, gamayacu-açu	Baiacu
6	P. Abdom. *Silurus Felis* Brouſſ. *1*	*Bagre bagre* (Linnaeus, 1766)	Close by the Ruivo	–	Bagre-sari
7	P. Th. *Labrus cromis*	*Micropogonias undulatus* (Linnaeus, 1766) or *M. furnieri* (Desmarest, 1823).	Corvina	Guatucupá	Corvina
8	P. Th. *Pleuronectes papillosus*	*Achirus* or *Achiropsis* in the Dictionary; *Ancylopseta kumperae* Tyler, 1959	Linguado	Aramaça	Aramaçá, aramaçã
9	A. N. *Raja*	Maybe *R. agassizi* or *R. castelnaui* ; valid as *Rioraja agassizii* (Müller & Henle, 1841) and *Atlantoraja castelnaui* (Miranda Ribeiro, 1907)	–	–	Arraia, arraia-santa
10	P. Th. *Labrus fluviatilis*	Ciclidæ, many spp.	–	Acará	Acará
11	P. Abd. *Loricaria plecostomus*	*Plecostomus* or other genera (Loricariidæ) *Plecostomus* Gronovius, 1754 is a junior synomym of *Hypostomus* Lacépède, 1803	–	Guacary	Guacari, acari, uacari
12	P. Th. *Sciæna*	Sciænidæ Van der Hoven, 1830	Close by the Caxuxo	–	Maybe cachucho
13	P. Th. *Perca taurina* Brouſſ.	*Mycteroperca microlepis* (Bean, 1879) or *M. venenosa* (Linnaeus, 1758); or *Cephalopholis cruentata* (Lacepède, 1802); or *Rypticus saponaceus* (Bloch & Schneider, 1801). *Mycteroperca rubra* (Bloch, 1793) as in the Collection.	Badejo	–	Badejo, serigado
14	P. Th. *Sparus* sp.n. Brouſſ.	*Sparus* Linnaeus, 1758 maybe a n. sp.	Maybe a small Pargo	–	-
15	*Lophius vespertilio*	*Lophius gastrophysus* Miranda Ribeiro, 1915	–	–	Diabo-marinho
16	P. Th. *Labrus rostratus*	*Bodianus rufu* (Linnaeus, 1758)	Papagayo	Tetimixira	Papagaio
17	P. Th. *Larus argenteus*	*Cynoscion,* several spp. incl. *C. virescens* (Cuvier, 1830)	Pescadinha branca	–	Pescada branca
18	P. Th. *Labrus variegatus*	Labridæ Cuvier, 1816 and Scaridæ Rafinesque, 1810, several spp.	Bodião verde	Suruucapeba	Bodião verde
19	*Perca* nov. sp. Brouſſ.	Indeterminate	A small Robalo	–	Robalo
20	P. Th. *Scomber*	*Scomberomorus maculatus* (Mitchill, 1815) Repeated – see number 2	–	Sororoca	Sororoca

TABLE 3. — Continuation.

No.	Scientific name in the original document	Updated Scientific name	Common names		
			Old document	Brazilian	Extant
21	*Loricaria cataphracta*	Loricariidæ Rafinesque, 1815; *Plecostomus* Gronovius, 1754 or *Rhinelepis* Agassiz, 1829*, Plecostomus* being a junior synomyn of *Hypostomus Loricaria cataphracta* Linnaeus, 1758 is a valid although much different species from both the two aforementioned genera	–	Guacary	Guacari or cascudo
22	*Perca* sp. nov. Brouſſ.	*Epinephelus nigritus* (Holbrook, 1855) is a valid species, *Hyporthodus nigritus* (Holbrook, 1895)	Xerne, Cherne	–	Cherne
23	P. Th. *Chætodon triostegus*	*Chætodipterus faber* (Broussonet, 1782)	Enxada	Guareruá	Guaracema
24	P. Th. *Sciæna argentea*	Cichlidæ Bonaparte, 1835; acarás	–	Acaratinga	Acarapeba
25	P. Th. *Labrus lævis* / *Sciæna* n. sp. Brouſſ. *Pescada marmota g.de*	*Cynoscion acoupa* (Lacepède, 1801) as in the collection	Pescada marmota	–	Pescada marmota
26	P. Th. *Labrus cromis*	Classification does not seem possible	Small Corvina	Guatupucá	–
27	P. Th. *Sparus affinis argyrops* Brouss.	Cichlidæ Bonaparte, 1835: several genera	–	Acarapeba	Acarapeba
28	P. Th. *Sparus maculatus*	Indeterminate	–	Canhenha	–
29	P. Abdom. *Cyprinus niger*	Erythrinidæ Scopoli, 1777, *Hoplias malabaricus* (Bloch, 1794)	–	Traira See 39	Traíra
30	P. Abd. *Salmo mediterraneus* Brouſſ.	Characidæ Agassiz, 1829, genus *Leporinus* Agassiz, 1829	–	Piaba	Piaba or Piava
31	P. Th. *Perca* n. sp. Brouſſ.	*Priacanthus arenatus* Cuvier, 1829	Olho de cão	–	Olho de cão
32	P. Th. *Perca*	Characidæ Agassiz, 1829, Mileinæ Holmberg, 1887	Salema Maybe unsuitable for the Characidæ	Pacû	Pacu
33	P. Th. *Perca atraria*	Not identified	–	Guarcupí, Piraubu	–
34	P. Th. *Chætodon lunulatus* sp. n. Brouſſ.	Not identified	Viuva	Guarerua	Maybe Xaréu or Guaracema
35	A. N. *Balistes*	Monacanthidæ Nardo, 1842, Balistidæ Risso, 1810	Peixe-porco	Pira-aca	Cangulo or Peixe-porco
36	P. Abd. *Salmo brasiliensis*	Characidæ Agassiz, 1829; valid as *Brycon insignis* Steindachner, 1877	–	Piabanha	Piabanha
37	P. Th. *Perca* sp. n. Brouſſ.	Not identified	Rhilatino	–	–
38	P. Th. *Perca* sp. n. Brouſſ.	Pomadasyidæ	–	Corocoroca	Corocoroca
39	P. Abd. *Cyprinus niger*	Erythrinidæ Scopoli, 1777, *Hoplias malabaricus* (Bloch, 1794)	–	Traira See 29	Traíra
40	A. N. *Squalus tiburo*	Sphyrnidæ Gill, 1872, *Sphyrna* Rafinesque, 1810	Cação martello	Papana	Peixe-martelo
41	P. Ab. *Silurus galeatus*	Indeterminate Siluroid		Combaca	–
42	P. Th. *Labrus lævis*	Sciænidæ Linnaeus, 1758, *Cynoscion* Gill, 1861	Pescada branca	–	Pescada branca

TABLE 3. — Continuation.

No.	Scientific name in the original document	Updated Scientific name	Common names		
			Old document	Brazilian	Extant
43	*Silurus* sp. n. Brouſſ.	Pimelodidæ C. H. Eigenmann & R. S. Eigenmann, 1918, *Pseudoplatystoma corruscans* (Spix & Agassiz, 1829)	–	Soroby	Surubim
44	P. Th. *Chætodon faber*	Ephippidæ Bleeker, 1859, *Chætodipterus faber* (Broussonet, 1782)	–	Enxada, peixe gallo Brouſſ.	Enxada
45	P. A. *Lophius vespertilio*	Oligocephalidæ Jordan, 1895, *Ogcocephalus longirostris* (Valenciennes, 1837); this is probably ajunior synonym of *Ogcocephalus vespertilio* (Linnaeus, 1758)	Morcego	Guacucuia	Peixe-morcego, guacucuia
46	P. Th. *Coryphaena equicilis*	Coryphaenidæ Rafinesque, 1810, *Coryphaena hippurus* Linnaeus, 1758	Dourado	Guaracapema	Guaraçapema
47	P. Th. *Scomber amia*	Carangidæ Rafinesque, 1815 several genera and spp.	Olhete Brouss.	–	Guará, Guará-etê, Xareu
48	P. Th. *Perca guttat*	Serranidæ Innamura & Yabe, 2002, *Epinephelus itajara* (Lichtenstein, 1822)	Mero	Cupuguaçu	–
49	P. Ap. *Trichiurus impenis*	Synbranchidæ Bloch, 1796, *Synbranchus marmoratus* Bloch, 1795		Mucum	Muçum
50	*Chætodon* sp.n. Brouſſ.	Indeterminate	Quasi Goraz		–
51	P. Th. *Sparus variegatus*	Maybe *Archosargus rhomboidalis* (Linnaeus, 1758)	–	Caranhota	Caranha
52	P. Th. *Perca lupus*	Centropomidæ Poey, 1868, *Centropomus undecimalis* (Bloch, 1792)	Robalo	Camuri-apeba	Robalo, camurim, camuripeba
53	P. Th. *Sparus dentatus*	Pomadasyidæ Gill, 1885, *Genyatremus luteus* (Bloch, 1790)	–	Caicanha	Caicanha or carcanha
54	P. Abd. *Silurus callichtys*	Callichthyidæ Bonaparte, 1838, *Corydoras* Lacépède, 1803 and other genera	–	Tamcaiá	Tambuatá or tamuatá, *Callichthys callichthys*
55	P. Th. *Sciæna punctata*	Doubtful Ciclidæ Bonaparte, 1835, *Pterophyllum* Heqkel, 1840	–	Acarapeba	Acarapeba
56	*Perca* n. sp. Brouſſ.	Indeterminable	–	–	–
57	*Salmo pulverulentus*	Characidæ Agassiz, 1829, Anostomatinæ indeterminate	–	Piaba	Piava
58	P. Th. *Labrus coccineus*	Labridæ, several genera	Bodião vermelho	Teumixira	Bodião vermelho
59	P. Th. *Sparus luteus*	If salema, is the Pomadasyidæ Gill, 1885 *Anisotremus virginicus* (Linnaeus, 1758); if pacu, Characidæ Agassiz, 1829, Mileinæ Holmberg, 1887. Pacus are currentely in the family Serrasalmidae Bleeker, 1859.	Salema	Pacu	Salema, pacu
60	P. Th. *Chætodon saxatilis*	Indeterminable	–	Bambaqueré	–
61	P. Th. *Perca fimbriata*	Indeterminable		Saguricá, saguaracá	–
62	P. Abd. *Fistularia tabaccaria*	Fistulariidæ Linnaeus, 1758, *Fistularia tabaccaria* Linnaeus, 1758	–	Petumbuaba	Petimbuaba Trombeta

TABLE 3. — Continuation.

No.	Scientific name in the original document	Updated Scientific name	Common names		
			Old document	Brazilian	Extant
63	P. Th. *Perca atra*	Serranidæ, *Epinephelus flavolimbatus*; valid as *Hyporthodus flavolimbatus* (Poey, 1865)	Garoupa de S. Thomé	Piraumbu	Garoupa-de-São-Tomé
64	P. Th. *Chætodon arcuatus*	*Pomacanthus arcuatus* (Linnaeus, 1758), *Chætodipterus faber* (Broussonet, 1782) as in the Collection	Frade franciscano	Guarema	Paru-da-pedra
65	P. Th. *Chætodon striatus*	*Chætodon striatus* Linnaeus, 1758	Freira	Guarema Brouſſ.	Borboleta, carapiaçaba
66	P. Th. *Perca* sp. n. Brouſſ.	Lutjanidæ T. N. Gill, 1861, *Lutjanus purpureus* (Poey, 1866) as in the Collection	Vermelho	Caranha	Vermelho, caranha, corcoroca
67	P. Th. *Sparus variegatus*	Lutjanidæ T. N. Gill, 1861, *Lutjanus* Bloch, 1790	Vermelho	Caranha	Vermelho, caranha
68	P. Th. *Perca glabra*	Still not identified	–	Piratipua	–
69	P. Th. *Scomber guarateraba* Margraf (Markgraf)	Still not identified		Piratipua	–
70	P. Th. *Perca sparoidea*	Sparidæ Linnaeus, 1758, *Diplodus* Rafinesque, 1810 or *Archosargus* (Gill, 1865)	Sargo Guribiaya	–	
71	P. Th. *Scorpaena maculate & porcus*	*Scorpaena porcus* Linnaeus, 1758 and maybe other spp.	Mairangabu	–	Rascasso
72	P. Th. *Sparus pagrus*	*Pagrus pagrus* (Linnaeus, 1758)	Pargo	Pargo	Pargo
73	P. Abd. *Theuthis hepatus*	*Paracanthurus hepatus* (Linnaeus, 1766)	Barbeiro Acarauna	Barbeiro	–
74	P. Th. *Mulus brasiliensis* sp. n. Brouſſ.	*Upeneus maculatus* (Bloch 1793); valid as *Pseudupeneus maculatus* (Bloch, 1793), or *Mulloidichthys martinicus* (Cuvier, 1829)	Salmonete Pirametará	Salmonete Parametara	Salmonete
75	P. Abd. Argentina fluminensis	Identification not possible	Rato Uvaraná	–	–
76	*Mugil cephalus*	*Mugil cephalus* Linnaeus, 1758	Paraty	Tainha Curimã Parati	Fataça, Taínha, Mugem
77	P. Abd. *Esox belone* Brouſſ.	*Hemirhamphus brasiliensis* (Linnaeus, 1758)	Timuca	Agulha	Agulha Peixe-Agulha
78	P. Th. *Trigla volitans*	*Dactylopterus volitans* (Linnaeus, 1758) (*Exocoetus volitans* Linnaeus, 1758); these are very different fish that belong to different families	Santo Antonio, Muripira	Peixe-voador	Peixe-voador
79	*Gastrosteus saltatrix*	Identification not possible; *Pomatomus saltator* (Linnaeus, 1758) or *P. saltatrix* (Linnaeus, 1766); the valid spelling is the latter	Near Pargo	Maybe Enchova	Maybe Anchova
80	P. Abd. *Argentina glossodonta*	Identification not possible	Maybe Uvarana	–	–
81	A. N. *Diodon histrix*	*Diodon hystrix* Bloch, 1785	Baiacu Guamiracu guava	Baiacu-de-espinho	Peixe-ouriço
82	P. Th. *Scomber condylus*	*Trachurus lathami* Nichols, 1920	variety of Xixarro	Chicharro	Cicharro
83	*Mugil Cephalus*	The same as 76	As 76	As 76	As 76

TABLE 4. — List of Fishes from Portugal in *Peixes do Museo da Academia*, a document ascribed to Brotero.

Items as written in the list	Scientific and extant common names
Arraia – Raia batis, oxyrhinchus, Fullonica, Pas/tinaca, altavela, clavata (Rubus it. Brot.) [ending sentence unclear]	Genera *Raja (batis* Linnaeus, 1758*, oxyrhinchus* Linnaeus, 1758*, clavata* Linnaeus, 1758), common name raia; and *Dasyatis* uge, ratão; *Myliobatis aquila* (Linnaeus, 1758)*,* also named ratão
Badejo – Gadus tripterygius, imbatis (indeterminate species), albus	Badejo is *Gadus merlangus* l. 1758*, G. pollachius* (Linnaeus, 1758) or *Gadiculus argenteus* Guichenot, 1850
Cação – Squalus Stellaris	*Scylliorhinus stellaris* (Linnaeus, 1758): patarroxa, gata
Congro – Muræna ophis	*Conger conger* (Linnaeus, 1758): safio, congro
Dourada – Sparus aurata	*Sparus aurata* Linnaeus, 1758: dourada
Faneca,Gadus bilobatus	*Gadus luscus* Linnaeus, 1758: faneca
Goraz, Sparus, doubtful … caxuxo sp. pagrus / pargo	Goraz is *Pagellus centrodontus* (De la Roche, 1809)*;* cachucho (formerly caxuxo) is *Dentex macrophtalmus* (Bloch, 1795), pargo is *Pagrus pagrus* (Linnaeus, 1758) or *P. auriga* Valenciennes, 1836-1844
Lixa, Squalus Squatina	*Squatina squatina* (Linnaeus, 1758) peixe-anjo; lixa is also *Centrophorus granulosus* (Schneider, 1801)
Murea, Muræna helena	*Muraena helena* Linnaeus, 1758, moreia
Peixe agulha, Esox belone	Agulha or Peixe-agulha, *Belone belone* Linnaeus, 1758
Peixe alecrim, Squalus vulgaris Rondel.	Alecrim is a very different fish, *Serranellus cabrilla* (Linnaeus, 1766); *Squalus vulgaris* Risso is but a junior synonym of *Squalus acanthias* Linnaeus, 1758
Peixe anjo, Squalus Squatina	*Squatina squatina* (Linnaeus, 1758): peixe-anjo
Peixe espada, Xiphias gladius	Espadarte or peixe-agulha, *Xiphias gladius* Linnaeus, 1758
Peixe gallo, Zeus Faber	Peixe galo, *Zeus faber* Linnaeus, 1758
Peixe porco, Squalus Centrina	*Oxynotus centrina* (Linnaeus, 1758)*,* peixe-porco
Peixe prego, Squalus Spinax	Prego or Peixe-prego, *Echinorhinus brucus* (Bonnaterre, 1788)
Pescada, Gadus merluccius	Pescada, *Merluccius merluccius* (Linnaeus, 1758)
Rodovalho, Pleuronectes rhombus	Pregado, solha, or rodovalho, *Psetta maxima* (Linnaeus, 1758)
Rodovalho pregado, Pleuronectes maximus	Pregado, solha, or rodovalho, *Psetta maxima* (Linnaeus, 1758)
Ruivo - Trigla cataphracta	Ruivo, cabra or casca, *Peristedion cataphractum* (Linnaeus, 1758)
Sarda - Scomber scomber	Sarda, cavala, *Scomber scombrus* Linnaeus, 1758
Sardinha - Clupea spratus	Sardinha, *Sardina pilchardus* (Walbaum, 1792)
Solha - Pleuronectes solea	Solha, *Pleuronectes platessa* Linnaeus, 1758
Tainha - Mugil cephalus	Tainha, fataça or mugem, *Mugil cephalus* Linnaeus, 1758
Sturião ou Solho rey – Acipenser sturio	Esturjão or solho, *Acipenser sturio* Linnaeus, 1758

(although there is no evidence of requisitions from the Academy's museum by Geoffroy). The same document was written in Portuguese by an experienced naturalist, most probably by Brotero himself, and is sometimes difficult to decipher. It concerns a majority of fishes from Brazil, and ends with a list on fishes from Portugal. In the Brazilian part there are not less than 22 abbreviations "Brouſſ." However there is a comment with the full name "Conforme [according to] Brouſſonet he huma nova eſpecie de Sciaena" [is a new species of Sciaena]. There remains no doubt of an intervention on the collection of fishes from Brazil by someone called Broussonet, a name we then were not acquainted with. The same document includes at the end the following (a) the list of fishes from Portugal (Table 4).

(d) The list of fishes from Portugal (Table 4).

DISCUSSION AND CONCLUSIONS

After the stay in Lisbon of de Tournefort (17th century) and that of the naturalist Merveilleux, who travelled and collected specimens for King João V's Cabinet (lost 1.XI.1755 in the Great Lisbon Earthquake), Pierre Broussonet appears as the first French researcher engaged in the study of Portuguese natural history collections, and especially on fishes kept at the Royal Museum at Ajuda and the Royal Academy of Sciences.

Our present status of knowledge is largely based on documents that allow us to enlarge and rectify our previous doubts (Antunes & Balbino 2003: 84) on Broussonet and his formerly unsuspected, albeit valuable contribution.

Brotero's documents (Bibliothèque centrale of the Muséum national d'Histoire naturelle, Paris, mainly Ms 2441) are remarkable, although its real importance has been overlooked. The main document concerning the fish collection of the Lisbon Academy of Sciences has neither signature nor date. However, the type of the paper's printed Prince Regent seal points out to sometime between 1799 and 1816; certainly after 1811 when Brotero became Director of the Ajuda Museum but not much later.

The list of the fishes from the Academia das Sciencias is both evidence of the very existence of its Museum at that time and also shows the intervention of Broussonet.

Broussonet arrived in Lisbon sometime in September or October 1794. He certainly was there from early November 1794 until 28.I.1795, hence at most *c.* 4 months. An experienced naturalist, especially on ichthyology, he produced a pioneer work on an entirely unknown, Royal Academy of Sciences of Lisbon collection.

The document on the fishes from the Academy's Museum (Table 3) is by far the more important one as far as Broussonet's intervention is concerned. We do not know of any other document dealing with estate that can unequivocally be attributed to this museum. It refers to 82 items that may be ascribed to Brazil based on their common names. An additional, summary list of 25 Portuguese fishes is given (Table 4).

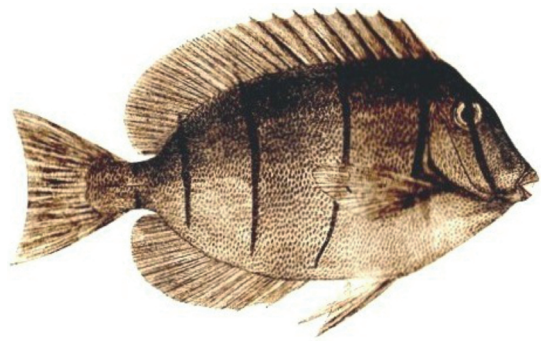

FIG. 3. — *Chaetodon triostegus* Linnaeus, 1758. *Ichthyologia, Sistens, Piscium, Descriptiones et Icones* (Broussonet 1782).

The former list includes 15 (18.3 %) species which have been regarded as new for science according to Broussonet. Unfortunately, these have not been properly described, named and published; hence all are but *nomina nuda* and invalid. There are 9 more (11 %) references to the same ichthyologist in other situations, or 24 references (29.3 %) as a whole. That allows us to conclude Broussonet's intervention was very intensive.

The significant number of species he regarded as new suggests that he worked with quite scant access to adequate literature and comparative collections. He may have suspected they were new just because there were no additional available data.

On the other hand, the reference to Broussonet (Table 3) allied to the lack of references to any other naturalist reinforces once again the evidence of his contribution. Otherwise, the fact that Brazil is in most cases the primary origin of the specimens still more enhances Alexandre Rodrigues Ferreira. Identical preparation of specimens and the context fully corroborate this.

There is no doubt that the Academy's collection of fishes had been observed by a qualified ichthyologist. Multiple references in the lists point to Broussonet.

It seems that Broussonet's stay in Lisbon was very much acceptable, moreover when he was lodged at the houses of the guard of the Real Academia das Sciências de Lisboa, which would have been favorable conditions to study its collections.

Another point seems to corroborate the probability of Broussonet's intervention. During his

FIG. 4. — *Chaetodon faber* Broussonet, 1782. *Ichthyologia, Sistens, Piscium, Descriptiones et Icones* (Broussonet 1782).

stay, he surely consulted the available literature, including his own study of fishes from the first expeditions to the Pacific leaded by Cook (Broussonet 1782). It is meaningful that this memoir existed at the Academy's Library, as shown by the early Academy's stamps on it (Fig. 2). It is the only volume that actually was published from those on fishes he intended to publish. It contains descriptions and figures of two species that are comprised in Brotero's list (*c.* 1811); both are represented by specimens from Brazil:

"P. Th. Chaetodon triostegus
Enxada – Guareruá
…
P. Th. Chaetodon Faber
Enxada, qi [quasi] peixe gallo Brouss."

All seems to agree, and furthermore to be confirmed, by the presence at the Academy of Sciences of a specimen identified as *Chaetodon triostegus* (updated nomenclature: *Chaetodipterus faber* – see Antunes & Balbino 2003) (Figs 3, 4).

It is without doubt that the Ajuda Museum granted duplicate specimens to the Real Academia das Sciencias de Lisboa, a fact that although likely had not yet been demonstrated. Once more, we can conclude that interest for scientific matters in Portugal and at the Academy in particular were aroused. This corresponds to a rather advanced but largely unsuspected state of knowledge and development.

Broussonet's contribution on Portuguese collections has not been acknowledged until now and was possibly silenced by Broussonet's contemporaries.

The Linnean classifications on the cardboards where the so-called "herbarium" fishes are mounted are therefore not from Geoffroy but indeed from Broussonet, who appears therefore as a pioneer of the scientific cooperation between Portugal and France.

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