

## Discovery of scientific correspondence of P.P.C. Hoek (1851–1914), including three unpublished letters by Charles Darwin

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### Abstract

Recently the scientific correspondence of the Dutch zoologist P.P.C. Hoek (1851–1914) turned up in the Artis Library. This collection contains three hitherto unpublished letters from Charles Darwin. It appears that Charles Darwin recommended Hoek to the favour of Sir Charles Wyville Thomson upon Hoek's request for duplicates of Pycnogonida collected by the Challenger Expedition. This led to Hoek's participation in the publication of the scientific results of the Challenger Expedition. Hoek's report on the Pycnogonida was published in 1881 and those on the Cirripedia in 1883 (Systematic Part) and 1884 (Anatomical Part). In a letter to Hoek dated November 23, 1881 Charles Darwin praises Hoek's contribution on the Pycnogonida as a magnificent piece of work with admirable plates.

### Résumé

La correspondance scientifique du zoologiste néerlandais P.P.C. Hoek (1851–1914) a été récemment découverte dans la Bibliothèque Artis. Cette collection contient, entre autres, trois lettres inédites écrites par Charles Darwin. Il en résulte que Darwin avait recommandé Hoek à Sir Charles Wyville Thomson, à la suite de la sollicitation par Hoek d'exemplaires doubles de Pycnogonides collectés par l'Expédition Challenger. Ceci aboutit à la participation de Hoek à la publication des résultats scientifiques de cette expédition. Le travail de Hoek sur les Pycnogonides fut publié en 1881, ceux sur les Cirripèdes en 1883 (partie systématique) et 1884 (partie anatomique). Dans une lettre du 23 novembre 1881, Charles Darwin complimente Hoek pour sa contribution sur les Pycnogonides, qu'il considère comme étant un magnifique ouvrage illustré d'admirables planches.

### Introduction

During the year 1989, the larger part of the collection of the Artis Library had to be removed as a consequence of the adoption of the plan to rehabilitate the authentic 19th-century library building designed by the well-known Dutch architect Gerlof Bartholomeus Salm. The building and the interior of the reading room of the Artis Library had been declared a national monument in 1972. The library of the Royal Zoological Society "Natura Artis Magistra", founded in 1838, has been housed here ever since 1868. In 1939 the Artis Library became part of the University of Amsterdam (cf. Pieters, 1988; Pieters et al., 1990).

While labelling the bookshelves for the removal, our attention was drawn to two small filing boxes placed next to the so-called Biohistorical Archive started by Dr. H. Engel in the 1920's. They appeared to contain the scientific correspondence of the Dutch zoologist P.P.C. Hoek.

### Who was P.P.C. Hoek?

Paulus Peronius Cato Hoek was born at Giethoorn (Netherlands) on 16 June 1851. He started his biological studies at the Athenaeum Illustre in Amsterdam and from 1872 on he continued his biological studies at Leiden University. There he obtained his doctoral degree in 1875 on a thesis entitled "Eerste bijdrage tot een nauwkeuriger kennis



*Fig. 1.* P.P.C. Hoek in 1883. Reproduced by G.A. de Zeeuw (Library of the University of Amsterdam) from the original photograph by A. Greiner (Nieuwendijk L. 89, Amsterdam) in the Biohistorical Archive of the Artis Library, University of Amsterdam.

der sessile cirripediën” [“First contribution to a more thorough knowledge of the sessile cirripeds”]. For more biographical details about his parents, tutors, wife and children, etc., we refer to the extensive biography by Holthuis (1979).

Hoek was appointed assistant at the “Zoötomisch Laboratorium”, Leiden, and held this post from 1874 to 1881. From 1878 to 1888 he was also employed as natural history teacher at the “Gymnasium” and “Hoogere Burger School” at Leiden. By consensus Hoek has, ever since its existence, been the most active member of the “Nederlandse Dierkundige Vereniging” (Dutch Zoological Society) founded in 1872 (see Sluiter, 1914, and Smit, 1972). He was the main initiator of the Zoological

Station of this Society and was always very active in its executive committees, e.g. as librarian, secretary, president, and as a member of the editorial board of the Society’s journal.

The Zoological Station was opened in 1876 as a simple, wooden, movable building. From 1887 on Hoek was appointed director of the, still movable, Zoological Station and the next year this function was combined with a new one especially created for him, viz., that of scientific advisor of the Dutch government in fishery affairs. The latter function would remain his principal one during the rest of his life (De Groot, 1988). Ever since then, Hoek devoted himself to the foundation of a permanent Zoological Station, well-equipped for scientific research. Thanks to Hoek’s energy and organizational abilities, the permanent Zoological Station could be opened at Den Helder as early as 1890. (Nowadays it is still flourishing under a new name at another site: the Netherlands’ Institute of Sea Research on Texel; see Smit, 1972.)

Hoek was also active as one of the initiators of the International Council for the Exploration of the Sea (ICES) founded in 1902. That same year, having been appointed first General Secretary of ICES, he had to move to Copenhagen. This function was occupied by him till 1908 (see e.g. Redeke, 1928). He was succeeded in 1902 as director of the Zoological Station by his assistant and son-in-law Dr. Heinrich Carl Redeke (1873–1945), who was appointed assistant scientific advisor in the same year. (For biographical details about H.C. Redeke see e.g. Engel, 1974.)

After his return to Holland, Hoek was concerned with the organization of the new “Rijksinstituut voor Visserijonderzoek” (National Institute for Fishery Research) of which he became director in 1912. He occupied this position until his sudden death at Haarlem on 27 February 1914. A survey of Hoek’s achievements in fishery research was given by Redeke (1913a) on the occasion of Hoek’s 25 years’ jubilee as scientific advisor in fishery affairs. The portrait reproduced in Fig. 2 was made on that occasion. A hundred years after Hoek’s appointment to scientific advisor, the date 1888 is to be considered the starting point of scientific fishery research in the Netherlands. We owe the outstanding

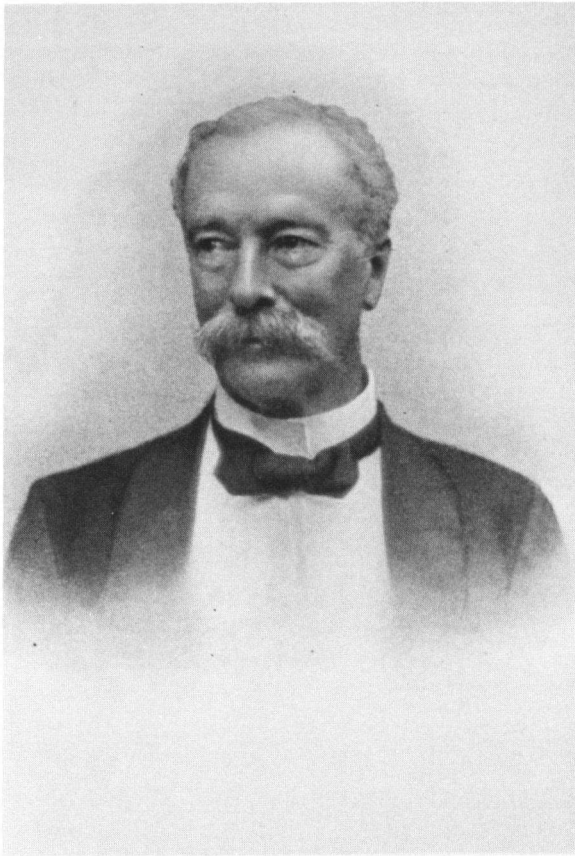


Fig. 2. Portrait of P.P.C. Hoek at the age of 61. Reproduced from the plate in Redeke, 1913a (photo: G.A. de Zeeuw, Library of the University of Amsterdam).

organizational set-up of the fishery research in the Netherlands to the person of P.P.C. Hoek, a scientist and manager unequalled up to the present (De Groot, 1988: 10–11).

Hoek left an appreciable scientific legacy. For a bibliography of his publications on ichthyology and fisheries we refer to Dean (1916) and for his publications over the period 1888–1913 to Redeke (1913b). Initially, he published mainly on the systematics, anatomy and ontogeny of Crustacea. He was also very interested in Pycnogonida and acquired international fame with his monographs on the Pycnogonida and on the Cirripedia of the Challenger Expedition directed by Sir Charles Wyville Thomson between 1873 and 1876 (published in 1881 and 1883–1884, respectively). This task was entrusted to him on Charles Darwin's recommendation

(Lorentz, 1914; Went, 1972; De Groot, 1988). The discovery of Hoek's scientific correspondence confirms the high regard held by Darwin for Hoek.

### Hoek's scientific correspondence

The collection consists of 325 letters, mostly written by biologists, and all directed to Dr. P.P.C. Hoek. They are arranged alphabetically by sender. The accompanying hand-written list of correspondents is reproduced in Fig. 3. Among the 113 correspondents many celebrities are to be found, e.g. Alexander Agassiz, Charles Darwin, Francis Darwin, Anton Dohrn, Max Fürbringer, Jacobus Henricus van 't Hoff, Ambrosius Arnold Willem Hubrecht, Willy Kükenthal, Henri de Lacaze-Duthiers, Franz Leydig, Alphonse Milne Edwards, John Murray, Max Weber, and Charles Wyville Thomson. The letters are neatly wrapped in 113 simple covers with the name of the correspondent on it in calligraphic writing. Incidentally a draft reply by Hoek is inserted, or short notes concerning the reply were jotted down by him on the same letter.

Apparently the significance of these letters was recognized from the outset. Probably the convenient arrangement was made at the instigation of Hoek himself or of his son-in-law H.C. Redeke. Hoek acted as librarian of the Dutch Zoological Society from 1877 at the earliest (according to members' lists) and after his departure to Copenhagen he was succeeded by Redeke. In the foreword of the 1914 supplement catalogue of the library of the Society, Redeke mentions the important donation of ca. 700 books and reprints comprising the "Bibliotheca carcinologica" of Dr. Hoek (Redeke, 1914: iii). Evidently, Hoek's correspondence remained in the care of his family at that time.

How did the correspondence end up in the Artis Library? It is certain that Redeke donated Hoek's correspondence to H. Engel to be added to his Bio-historical Archive (De Groot, pers. comm.). Professor Dr. Hendrik Engel (1898–1981) was a great historian of biology as well as a zootaxonomist and zoogeographer (see, e.g., Van Benthem Jutting, 1968). After his retirement in 1968 Engel was suc-

*Brieven, meermalens van biologen, gericht aan en afkomstig uit de nabatenochten van Dr. P.P.C. Hoek*

N <sup>o</sup>	Schrijver	Aantal	N <sup>o</sup>	Schrijver	Aantal	N <sup>o</sup>	Schrijver	Aantal
1.	Adelung, Nicolai von,	1	41.	Grisebach,	95	81.	Oyon, P. L.,	248
2.	Agassiz, Alexander, (1830-1910)	1	42.	Guenee, Jules de,	4	82.	Salon, D. Noël,	1
3.	Albrecht, Paul,	1	43.	Guze, A. N. G.,	1	83.	Pekelhaug, C. A.,	1
4.	Ayer, Howard,	1	44.	Hamer, Sidney F.,	2	84.	Peter, R.,	1
5.	Barris, J.	5	45.	Harting, Teeter,	11	85.	Pouchet, Georges,	1
6.	Beauvoisine, Georges,	3	46.	Hasselt, A. M. H. van,	2	86.	Prince, Edward E.,	1
7.	Beddard, Frank E.,	2	47.	Heswell, William A.,	1	87.	Racovitz, Emil G.,	3
8.	Bell, F. Jeffrey,	10	48.	Hickson, Sydney J.,	17	88.	Rees, J. van,	4
9.	Benecke, B.,	1	49.	Hoff, J. H. van t.,	3	89.	Richard, Jules,	6
10.	Beneden, Edmond van,	1	50.	Hoffmann, C. K.,	1	90.	Rigaux, Paul,	2
11.	Beneden, P. J. van	1	51.	Holwer, G. B.,	1	91.	Rogge, H. C.,	1
12.	Berlin, H.,	2	52.	Hoyls, Wm. C.,	4	92.	Rye, E. C.,	3
13.	Blanchard, Raphael,	3	53.	Hubrecht, A. A. W.,	2	93.	Schaminand, H.,	1
14.	Beyersinck, M. H.,	1	54.	Jonkink, F. B.,	1	94.	Sclater, F. B.,	1
15.	Bles, Edward J.,	1	55.	Joubin, Louis,	3	95.	Sedowick, Adam,	2
16.	Boeke, Jan,	1	56.	Jungerson, Hector F. L.,	1	96.	Selenska, Emil,	3
17.	Borlase, J. G.,	1	57.	Kampen, P. N. van,	1	97.	Hipley, Arthur E.,	1
18.	Burck, H.,	1	58.	Kennel, J. van,	1	98.	Suctor, C. Ph.,	4
19.	Büttiker, J.,	1	59.	Köpfer, Charles, A.,	2	99.	Szare Schneider, J.,	2
20.	Calder, F. L. P. van,	1	60.	Korringboerger, J. E.,	1	100.	Solger, B.,	1
21.	Campbell, R. J. A. L.,	5	61.	Kraepelin, K.,	2	101.	Spongel, J. W.,	3
22.	Canu, Eugène,	3	62.	Kückenthal, Willy,	1	102.	Stanley Gardiner, J.,	1
23.	Carus, J. Victor,	1	63.	Lacaze-Duthiers, H. de,	23	103.	Stiles, C. H.,	1
24.	Coutière, H.,	3	64.	Laffuze, J. Joyeux,	2	104.	Thompson Isaac C.,	1
25.	Dantam, Louis,	3	65.	Lanxman, J. E. de,	1	105.	Traub, Melchior,	7
26.	Darwin, Charles,	3	66.	Legendy, Franz,	1	106.	Van, H. de,	1
27.	Darwin, Francis,	2	67.	Lindeman, K.,	1	107.	Nigelius, W. J.,	1
28.	Delage, Yves,	2	68.	Lister, J. J.,	1	108.	Weber, Max,	8
29.	Dohrn, Anton,	3	69.	Lorenz, H. A.,	2	109.	Weber-van Basse, A.,	2
30.	Dolby, C. L.,	1	70.	MacLeod, J.,	1	110.	Weldon, W. F. R.,	1
31.	Dollfus, Adrien,	7	71.	Marion, A. F.,	1	111.	Wijhe, J. H. van,	2
32.	Dolle, Louis,	1	72.	Martens, E. van,	1	112.	Wright Thomson, L.,	3
33.	Engelmann, Th. W.,	1	73.	Maestman, Arthur J.,	4	113.	Zograf, N.,	6
34.	Ernst, J. Cosar,	4	74.	M'Intosh, Wm.,	5			
35.	Fischer, Henri,	1	75.	Metzger, A.,	3			
36.	Fowler, G. Herbert,	1	76.	Milne-Edwards, Alphonse,	2			
37.	Fürbring, Max,	5	77.	Möbius, Karl,	8			
38.	Gadcau de Kerulle, Henri,	4	78.	Murray John,	31			
39.	Gast, Reinhard,	2	79.	Nussbaum, Moritz,	1			
40.	Giard, Alfred,	4	80.	Oudemans, C. B. J. A.,	2			
		95			248			

Tota!

Fig. 3. Facsimile of the handwritten list of correspondents pertaining to the Hoek correspondence in the Artis Library, University of Amsterdam. The heading reads in translation: "Letters, for the greater part from biologists, directed to Dr. P.P.C. Hoek and originating from his legacy."

ceeded by Jan H. Stock in the chair of systematic and geographic zoology. It was then decided that Engel's Biohistorical Archive would be incorporated in the Artis Library by way of supplement to its superb historical collection.

#### Letters relating to the Challenger Expedition and to Darwin

Hoek's correspondence contains three letters from Charles Darwin, the first dated March 11, 1875, the

second dated (by Hoek, in pencil) “1877” and the last one dated November 23, 1881. Copies of the first two letters appear to be present in the Darwin Archive in the Cambridge University Library in England (see below). They are shortly mentioned in “A calendar of the correspondence of Charles Darwin, 1821–1882” (Burkhardt & Smith eds., 1985a: nrs. 9883 and 10334) which is the precursor of the continuing reference work “The correspondence of Charles Darwin” by the same editors, of which five volumes (Burkhardt & Smith eds., 1985b–1989) have appeared up to the present, covering the period 1821–1855. Thus we found apparently the very last Darwin letter, written in the last year of his life, in time to be included in this important reference work.

The first two letters are apparently written in the hand of an amanuensis, but signed by Darwin himself. The last letter (reproduced in Fig. 4) is completely written in Darwin’s own hand, although his son Francis acted as his assistant during the last eight years of his life (F. Darwin, 1887, vol 1: v). None of these three letters are mentioned by Francis Darwin in his “Life and letters of Charles Darwin” (F. Darwin ed., 1887), nor in “More letters of Charles Darwin” (F. Darwin & A.C. Seward eds., 1903: vii). In the latter work the editors state: “Our two volumes contain practically all the matter that it now seems desirable to publish. But at some future time others may find interesting data in what remains unprinted; this is certainly true of a short series of letters dealing with the Cirripedes, which are omitted solely for want of space.” Francis Darwin had made copies of his father’s letters from originals borrowed from his father’s correspondents (Burkhardt & Smith, 1985a: 3). This explains the existence of copies of the two first letters to Hoek in the Darwin Archive in Cambridge.

The first letter reads:

DOWN, | BECKENHAM, KENT. |  
RAILWAY STATION | ORPINGTON. S.E.R.

March 11/75

Dear Sir

I am much obliged for your very kind letter & the gift of your work. I am extremely glad that you have taken up the study of the Cirripedia. I am sorry to say that I cannot read your language, but one of my sons has already translated to me parts of

your book, & I feel sure that you will do excellent work. I am aware that I fell into several great errors, as about the ovaria, and from my ignorance of Histology I was quite unfitted to investigate one chief subject of your book, namely the formation of the ova. With the most sincere hope & expectation of your success I remain dear Sir | Yours very faithfully | Charles Darwin

Obviously, Hoek had presented his thesis to Darwin, and Darwin seemed to be very much impressed by Hoek’s work on the Cirripedia. Darwin was an expert in Cirripedia, and his “Monograph on the sub-class Cirripedia” published in 1851–1854 was the standard manual on the subject at the time.

The second letter reads:

DOWN, | BECKENHAM, KENT. |  
RAILWAY STATION | ORPINGTON. S.E.R.

Dear Sir

I am very much obliged to you for having sent me your “Embryology of Balanus” which from the beautiful figures, you seem to have worked out with the greatest care, and which I am sure will interest me greatly. | Dear Sir | Yours faithfully | Charles Darwin | [1877 added in pencil]

Thus, the letter is a grateful acknowledgement of the receipt of Hoek’s “Entwicklungsgeschichte der Entomostraken, 1: Embryologie von Balanus” (Hoek, 1876).

We will treat the part of Hoek’s remaining correspondence pertaining to the start of his participation in the publication of the results of the Challenger Expedition in chronological order. Some letters preserved in the Darwin Archive are included in the sequel and quoted from their abstracts in Burkhardt & Smith, 1985a.

On 1 May 1877, C. Wyville Thomson (1830–1882; superintendent of the scientific results of the Challenger Expedition) wrote to Charles Darwin that he is sorting material collected by the Challenger and wonders whether Darwin would care to examine the cirripedes (letter in Darwin Archive, listed in Burkhardt & Smith, 1985a: no. 10947). Darwin’s reply is unknown. It is possible that he suggested Hoek for the job, but there is no proof for this supposition.

Some weeks later Francis Darwin wrote to Hoek, in a letter dated 1877 in pencil:

Bafset | Southampton

Dear Sir,

My father directs me to tell you that he has written to Sir Wyville Thomson [sic] in favour of your request, & he hopes that you may be successful | Dear Sir | Yours faithfully | Francis Darwin

From a letter by Hoek to C. Wyville Thomson in the Darwin Archive (Burkhardt & Smith, 1985a: no. 11016) dated 25 June 1877 we know that Hoek had applied for duplicates of Pycnogonida collected by the Challenger Expedition. We found Sir Wyville Thomson's reply in Hoek's correspondence in the Artis Library. This letter confirms Charles Darwin's recommendation of Hoek:

University | Edinburgh | June 30th 1877

Dear Sir,

I have your letter with copies of your papers on the Pycnogonida and also a note from Mr. Charles Darwin supporting your request for Ms. Challenger material in mat. dupl..

I will be glad to let you have them – kindly let me know when, where, and how you would wish them sent. You will understand that I send you – not duplicates but the whole material. What I wish you to do is to pick out a complete set for description and to keep that set separate and return it to me named when you have completed the description. The lodgers in the British Museum – treat to separate the duplicates from one another and to affix to each of them a number referring to a list and return that set also to me. I cannot authorize specimens being dissected or mutilated unless there are more than 4 specimens of one species. I will defray any expense of bottles, spirit & c.

Let me know if you have means of having the plates lithographed – and what would be the expense – and tell me if you are prepared to commence at once, and to finish the thing out of hand. I send along with this a list of stations which also contains a short statement of how the work is to be done. | I am, dear Sir, | yours very faithfully | C. Wyville Thomson

The same day (30 June 1877) Sir Wyville Thomson wrote to Darwin (Burkhardt & Smith, 1985a: no. 11026) for advice on who would undertake the description of the Crustacea from the Challenger Expedition. Unfortunately, Darwin's reply is unknown. Sir Wyville appears to be rather careless of the letters he received, as we know from his second letter to Hoek:

University | Edinburgh

November 6th | 1877.

Dear Sir,

Will you very kindly send a replica of the letter you wrote me in July? If I got it it must have been when I was very much

occupied and just going abroad – and it must have some-how got put aside.

The material is now looked out and ready for you – and if you will again let me know the best way of sending it you shall have it at once.

Give me also an estimate of the entire cost of having about 100 copies cast off according to the inclosed pattern per 100 copies – Cost of drawing the plates – Cost of printing – Use of stones, tinting & = | Believe me | yours very faithfully | C. Wyville Thomson

The main correspondent with Hoek concerning the Challenger reports and specimens was the oceanographer and marine geologist John Murray (1841–1914), who edited the Challenger Reports after the death of Sir Wyville Thomson in 1882. From the 31 letters from John Murray to Hoek, dating between 1877 and 1898, it appears that they met each other at least twice and that they felt much sympathy to one another. Especially Murray's third letter, dated 29 January 1880, is important, because Hoek's treatment of the Cirripedia of the Challenger Expedition is here mentioned for the first time. We suppose that Sir Wyville Thomson had postponed the decision to ask Hoek for treating the Cirripedia, because he wanted Charles Darwin in the first place. Murray's letter reads:

Challenger Office | 32 Queen Street |  
Edinburgh | 29 January 1880

Dear Dr. Hoek,

Sir Wyville is quite willing that you should get the Cirripeds. We sent you yesterday a copy of Davidson's report [Report on the scientific results of the voyage of H.M.S. Challenger, Zoology Vol. I, Part i, Brachiopoda], with a note prefixed.

Would you like to have the Cirripeds soon, or will you wait till you have the Pycnogonids out of your hands. | Yours truly | John Murray.

At that time Hoek's report on the Pycnogonida of the Challenger Expedition had not yet been published. On 11 September 1880 Murray acknowledges receipt of a number of Hoek's plates, mentioning: "We are on the whole satisfied with your plates". In a letter dated 5 November 1880 Hoek is congratulated on having finished his paper and complimented again: "We will be glad to get the plates whenever they are ready. Yours will be a splendid paper." On 13 August 1881 Murray wrote that Hoek's report will be ready to be issued in about two weeks' time.

November 23<sup>d</sup> 1881

DOWN,  
BECKENHAM, KENT.  
RAILWAY STATION  
ORPINGTON. S.E.R.

Dear Sir

I thank you cordially for  
the present of your mag-  
-nificent work on the  
Pycnogonida. - The Plates  
seem to me quite admirable.  
I am delighted that you are  
going to undertake the  
Cimipelia. - With all  
good wishes & much respect  
I remain, Dear Sir  
Yours faithfully  
Charles Darwin

Fig. 4. Facsimile (original size) of Darwin's last letter to Hock, dated November 23 1881, in the Artis Library, University of Amsterdam.

Charles Darwin was very enthusiastic about Hoek's treatment of the Pycnogonida. In a letter dated November 23 1881 Darwin praised it as a magnificent work with admirable plates. This hitherto unpublished letter, written by Darwin about five months before his death on 19 April 1882, is reproduced here in Fig. 4. It reads:

November 23<sup>o</sup> 1881

DOWN, | BECKENHAM, KENT. |  
(RAILWAY STATION | ORPINGTON. S.E.R.)

Dear Sir

I thank you cordially for the present of your magnificent work on the Pycnogonida. – The plates seem to me quite admirable. I am delighted that you are going to undertake the Cirripedia. – With all good wishes & much respect I remain, Dear Sir | yours faithfully | Charles Darwin

Finally, in order to prove that Hoek's report on the Pycnogonida was very favourably received by pycnogonid specialists as well, we quote a passage from a letter by Alphonse Milne Edwards to Hoek dated 10 December 1881: "Je viens de recevoir votre beau mémoire sur les Pycnogonides recueillis par le Challenger . . . C'est le travail le plus considérable qui ait jamais été fait sur ce groupe d'articulés et il marquera sa place dans la science."

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