

How palynology could have been paepalology: the naming of a discipline

Journal:	<i>Palynology</i>
Manuscript ID	TPAL-2017-0073.R1
Manuscript Type:	Original Article
Date Submitted by the Author:	n/a
Complete List of Authors:	Edwards, Kevin; University of Aberdeen, Geography and Environment, School of Geosciences Pardoe, Heather S.; Amgueddfa Cymru, Natural Sciences
Keywords:	Palynology, etymology, E.V. Antevs, H.A. Hyde, D.A. Williams, L.J.D. Richardson, G. Erdtman

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1 **How palynology could have been paepalology: the naming of a**
2 **discipline**

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23 10,516 words including references, captions, footnotes

ABSTRACT

From its ‘modern’ pollen-analytical beginnings, the science of what we now term palynology wrestled with terminology and sought an acceptable name for the discipline. Starting in 1943, the mimeographed *Pollen Analysis Circular*, edited from Ohio by Paul Sears, led to discussion of the content, organisation and naming of a developing discipline. This came to a head in 1944 with Ernst Antev’s plea for ‘The Right Word’ and the suggestion of the word palynology from the Cardiff duo of Harold Hyde and David Williams. In the search for a suitable term, Hyde consulted Cardiff-based Irish classicist Leopold Richardson who advised against the word palynology and suggested six alternatives. Hyde, however, was wedded to the term palynology and, in the interests of euphony and ‘hankering after my own offspring’, was seemingly able to overcome Richardson’s scholarly objections by argument. Hyde and Williams defined palynology as ‘the study of pollen and other spores and their dispersal, and applications thereof.’ This was considered an advance because alternative terms such as pollen analysis, pollen statistics and pollen science did not include the application or interpretation of pollen evidence. The term palynology quickly found acceptability within the pages of the *Pollen Analysis Circular* and subsequently received an airing in *Nature*. Once palynology was adopted by the influential Swede Gunnar Erdtman, it was rapidly accepted by the palaeoecological community.

Keywords

Palynology; etymology; E.V. Antevs; H.A. Hyde; D.A. Williams; L.J.D. Richardson; G. Erdtman

1. Introduction

When Lennart von Post presented the first demonstration of quantitative pollen analysis at the Sixteenth Scandinavian Meeting of Natural Scientists in Oslo, July 1916, together with the presentation of pollen diagrams, he termed his study ‘pollen analysis’ (Swedish: *pollenanalysen*) (von Post 1916, 1918). As might be said, the rest is history, and the centenary of von Post’s lecture has passed with due celebration (e.g. Birks et al. 2016; Birks & Berglund in press; De Klerk 2017; Edwards 2017; Edwards et al. 2017; Richards 2017).

By the outbreak of World War II in 1939, pollen-analytical studies were embracing microscopic entities other than pollen (and spores) and the international scientific community was also receptive to initiatives to facilitate communication and the exchange of information and to reflect recent developments in the nascent science. This combination of factors led to the coining of the word ‘palynology’ by Harold Hyde and David Williams (1944) to express more meaningfully the essence and scope of study of pollen analysts. The birth of this neologism was somewhat more complex than might be thought from subsequent commentaries (e.g. Terasmae 1970; Boyd and Hall 1998; Hesse et al. 2009). In particular, archival evidence reveals that the successful word was proposed in the face of scholarly resistance from a forgotten player in this narrative – Leopold Richardson, the third man of palynology. This paper seeks to unravel aspects of the biography of the word and its advocates.

2. The *Pollen Analysis Circular* and the organization of the discipline

On 5 May 1943, Paul Bigelow Sears (1891-1990; Figure 1), then Professor of Botany at Oberlin College, Ohio (and later to become Chair of Yale’s Conservation Program), issued the first of what were to become eight issues of the *Pollen Analysis Circular* (1943-1944; Figure 2), succeeded by ten issues of the *Pollen and Spore Circular* (1945-1954) (Anderson

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3 74 2006). These mimeographed documents were envisaged as a means ‘of a freer interchange of
4
5 75 information among those who are interested in pollen analysis in this country’, given the
6
7 76 ‘suspension of many scientific meetings and increasing handicaps to travel’ (Sears 1943, p.
8
9 77 1). Prospective contributors were ‘cordially invited to submit brief notes and correspondence,
10
11 78 indicating questions on which you would desire information’ (ibid.). The launch of the
12
13 79 *Circular* reflected the ‘greatly increasing interest in the New World in pollen analytical work’
14
15 80 (Verdoorn 1943, p. x), set against the backdrop of censorship and restrictions on the
16
17 81 movement of printed matter.
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20
21 82 The first seven issues of the *Circular* contained a diet of news regarding such topics
22
23 83 as expressions of interest in the project, techniques, pollen slide exchanges, sites being
24
25 84 studied, wartime constraints, publications and members’ addresses. The issue of the
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27 85 organization of the discipline is also addressed overtly from issue 3, dated 15 September
28
29 86 1943. Thus, Harvard geomorphologist Kirk Bryan¹ (1888-1950; Figure 1) suggested the
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31 87 formation of a ‘Society for Pollen Analysis’ (Bryan 1943, p. 2) and Leonard Richard (‘Doc’)
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33 88 Wilson² (1906-1998; Figure 1) of the Department of Geology at Coe College, Iowa said there
34
35 89 were too many organizations, but he ‘would like to see one more that would deal primarily
36
37 90 with pollen and spore problems’ (Wilson 1943, p. 2). This was echoed in the following
38
39 91 *Circular* by François Émile Matthes³ (1874-1948), a Dutch-born geologist of the US
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44 ¹ Bryan had four children, one of whom is the acclaimed Quaternary palynologist Margaret Bryan Davis.
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46 ² Wilson was a pioneer palaeopalynologist who had spent a junior year abroad at the University of Leeds in
47 northern England as a botany/geology student from the University of Wisconsin-Madison. At Leeds he was
48 hosted by William Holmes Burrell (1864-1945; Edwards 2017), a bryologist and honorary curator of the
49 herbarium. Burrell (1924) who had been carrying out work on Pennine peats along with others and had been
50 influenced by a visit to Leeds by Gunnar Erdtman (section 5). There were several reasons for Wilson’s decision
51 to go to Leeds. His parents thought he should study in England and his student house-mate at Wisconsin was an
52 exchange student from Leeds (Kosanke & Cross 1995). The student was a grandson of Joseph B. Priestley
53 (1733-1804), dissenting clergyman, Liberal political theorist, scholar and chemist who was credited with the
54 discovery of oxygen. Burrell, along with Sears, had assisted in the PhD supervision of Wilson after his return to
55 the USA (Wilson 1938). In 1974 Wilson became the 6th recipient of the Gunnar Erdtman International Gold
56 Medal for Palynology.
57

58 ³ Matthes was a founder and president of the Association of American Geographers and he introduced the terms
59 nivation and Little Ice Age (Matthes 1939).
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3 92 Geological Survey, while *Circular* No. 6 (issued on 15 March 1944) contained a note by
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5 93 Ernest [sic.] Antevs who wished ‘to endorse Professor Kirk Bryan’s suggestion to form a
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7 94 society for pollen science with modest dues and I hope you [Paul Sears] will take the
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9 95 initiative’ (Antevs 1944a, p.4). A subsequent letter from William (‘Buck’) Albert Dreyer of
10
11 96 the Department of Zoology at the University of Cincinnati and Secretary of the Ecological
12
13 97 Society of America was to similarly entreat Sears for ‘a program of some kind on pollen
14
15 98 analysis and bog problems... Will you or a colleague... assume responsibility and proceed
16
17 99 with the organization at once?’ (Dreyer 1944, p. 1). University of Michigan-Ann Arbor
20
21 100 palaeobotanist Chester Arthur Arnold (1901-1977) expressed the hope that the
22
23 101 “‘paleopollenists” and paleobotanists can arrange some sort of program at the forthcoming
24
25 102 AAAS [American Association for the Advancement of Science] meeting... We need
26
27 103 something of the sort to keep us from getting into a rut’ (Arnold 1944, p. 1).

29 104 Issue 6, however, had also featured an item which was to set in train a fresh identity
30
31 105 for the discipline.
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36 107 **3. The Right Word**

38 108 Ernst Valdemar Antevs (1888-1974; Figure 1), ‘Small in stature but large in ability’ (Smiley
39
40 109 1974, p. 1), was a Swedish national who had received his PhD from the University of
41
42 110 Stockholm where he had studied with the varve chronologist Gerard de Geer. In 1929 he was
43
44 111 a contender for de Geer’s position as Professor of Geology, but the Chair was awarded to
45
46 112 Lennart von Post (Nordlund 2017). From the 1920s onwards he carried out chronological,
47
48 113 glacial, climatic and archaeological research in North America (Smiley 1974; Haynes 1990),
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50 114 becoming a US citizen in 1939, he eventually settled in Globe, Arizona from where he
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52 115 submitted the following (Antevs 1944b, pp. 2-3):
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3 117 THE RIGHT WORD? - Is 'pollen analysis' the proper name for the study of
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5 118 pollen and its applications? The word [sic.] 'pollen analysis' (meaning, I
6
7 119 suppose, analysis of peat for pollen) was from the beginning used in Sweden
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9
10 120 to signify the identification and percentage-determination of the pollen
11
12 121 grains of the principal forest trees in peat bogs and lake beds. However, its
13
14 122 inadequacy was soon obvious, as shown for instance by Gunnar Erdtman's
15
16 123 titles 'Literature on pollen-statistics...' and, beginning in 1932, 'Literature
17
18 124 on pollen-statistics and related topics.' Even the combination 'statistical
19
20 125 pollen analysis', refers only to the method of getting certain data which in
21
22 126 itself has little purpose and which does not apply to or cover all the branches
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24 127 of the pollen studies, much less the application of the direct results to
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26 128 climatic conclusions, etc. It is the knowledge gained from the pollen studies,
27
28 129 be these statistical or morphological, or be they concerned with pollen-
29
30 130 induced diseases as hayfever, etc., that has purpose and significance.

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34 131 "In this case the international combining form -logy (English
35
36 132 spelling) can hardly be used to denote this science, for the name would be, I
37
38 133 suppose, 'pollinology' (cf. polliniferous, pollinization), which is bad.

39
40 134 "To me 'pollen science' (Swedish, 'pollenvetenskap'; German
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42 135 'Pollenwissenschaft') and 'pollen scientific' sound better. Would 'pollen
43
44 136 science' be preferable to 'pollen analysis'?" - Ernst Antevs (Feb. 18, 1944).

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49 138 Paul Sears's response (p. 3) shows that he was obviously impressed by this:

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54 140 Both on the grounds of euphony and sense, this suggestion from Dr. Antevs
55
56 141 appeals to me. I am inclined to suggest, if it meets with no objection, and if
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3 142 interest warrants continuing this circular after the present year, that issues
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5 143 beginning in 1945 be entitled "Pollen Science Circular."
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10 145 Issue no. 7 of the *Circular* was dated 1 July 1944, and its first page carried a
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12 146 contribution from Anthony Orville Dahl (1910-2003; Figure 1) a plant cyto-taxonomist and
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14 147 aerobiologist probably then at Harvard, although about to return to his doctoral institution of
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16 148 Minnesota-Minneapolis (Abbe 1972; Rowley and Rowley 2003):
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21 150 THE RIGHT WORD. - "Dr. Antevs' enquiry into the 'Right Word' is
22
23 151 interesting. It appears that we grant awkward phrases an incidental existence
24
25 152 without being particularly aware of their ineptness. I have no set feelings on
26
27 153 this subject - however, I wonder whether the term 'analysis' hasn't been used,
28
29 154 consciously or otherwise, in the sense of 'syllabus' - of knowledge gained
30
31 155 from the use of numerous and varied research techniques applicable to the
32
33 156 many phases (ecological, atmospheric, morphological, cytological, genetical,
34
35 157 etc.) of pollen study. If this is not the usual interpretation, 'pollen science'
36
37 158 would seem like a more apt and generalized expression. Some of the difficulty
38
39 159 as Dr. Antevs suggests, appears to be initially imposed by the fact that the
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41 160 term 'pollen' is not readily plastic in the manner that, for example, 'cytology'
42
43 161 and 'anatomy' are." - A. Orville Dahl (Mar. 31, 1944)
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50 163 *Pollen Analysis Circular* No. 8, issued 28 October 1944, contained two items
51
52 164 relevant to 'The Right Word'. The second of these was an undated letter from Kirk Bryan
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54 165 (Bryan 1944, p. 6):
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3 167 "I have been toying with the idea of 'micro-paleobotany' as including most
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5 168 of the work on pollen and spores and also all minor constituents of peat
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7 169 and humus layers of vegetative remains which have to be identified by
8
9 170 microscopic work. We have a micro-paleontology, and this term is now
10
11 171 current. It is not a perfect term, as the interest of the society is in the
12
13 172 paleontology of microscopic animals. Hence micro-paleontology is badly
14
15 173 constructed. Micro-paleobotany would have the same objection. It is also
16
17 174 true that some of these people who are interested in pollen from the
18
19 175 standpoint of human allergies might not take kindly to the name which
20
21 176 implies that the principle [sic.] objectives have to do with past events.
22
23 177 Naturally the geological adherents are primarily interested from the point
24
25 178 of view of the past, and have only nominal interest in methods of detecting
26
27 179 different types of pollen, etc. We, of course, realize that in order for the
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29 180 paleobotanists' conclusions to be valid, identification must be absolute, but
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31 181 obviously we cannot retain too much interest in the methods by which
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33 182 absolute identification is achieved."
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43 184 Bryan's note had been preceded by what was to become the crucial intervention in
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45 185 the naming of the discipline. It was submitted by an interesting pairing. Harold Augustus
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47 186 Hyde⁴ (1892-1973; Harrison 1974; Figure 1) was a Cambridge-trained botanist who had
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49 187 become Keeper of Botany in 1922 at the National Museum of Wales in Cardiff. His wide
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52 ⁴ Hyde, son of a hairdresser, was born in Ipswich, Suffolk, England. He graduated with a BA from Downing
53 College, Cambridge in 1914 and then became a schoolmaster in Birmingham and Stamford, Lincolnshire. Five
54 months before the end of the First World War, he joined the British Army's Royal Garrison Artillery as part of
55 the Territorial Force (volunteer reserve) and served in France with the rank of 2nd Lieutenant. From 1919 he was
56 a teacher at Tonbridge School, Kent, before his National Museum of Wales appointment in 1922. He remained
57 in Cardiff for the rest of his life. He married Dorothy Kathleen Smallman (1894-?1985) from Tenbury,
58 Worcestershire in 1917 and they had two children.
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3 188 botanical interests included Quaternary pollen and aeropalynology as well as flowering plants
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5 189 and ferns (e.g. Hyde and Wade 1934, 1940; Hyde 1940; Hyde and Williams 1945; Hyde and
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7 190 Adams 1958). His association with David Aelwyn Williams⁵ ('DA'; 1907-1986; BHD 1986;
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9
10 191 Figure 1) began in 1940. 'By chance a physician seeking information on pollen (in the air)
11
12 192 and a botanist who had already worked on pollen (in peat) were both resident in Cardiff and
13
14 193 so, late in 1941, they embarked together on the first day-to-day census of atmospheric pollen
15
16 194 to be made in Europe' (Hyde and Williams 1953, p. 84). In 1943 they published their first
17
18 195 joint paper on atmospheric pollen in *Nature*. Williams was a medically trained doctor in
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20
21 196 Cardiff who had suffered from asthma since childhood and that had a profound impact upon
22
23 197 the course of his clinical and research careers. The duo's suggestion (Hyde & Williams 1944,
24
25 198 p. 6; Figure 3; Supplementary Material Figures 1a, 1b) was as follows:

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30 200 THE RIGHT WORD. - "The question raised by Dr. Antevs: 'Is pollen
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32 201 analysis the proper name for the study of pollen and its applications?' and
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34 202 his suggestion to replace it by 'pollen science' interests us very much. We
35
36 203 entirely agree that a new term is needed but in view of the fact that pollen
37
38 204 analysts normally include in their counts the spores of such plants as ferns
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40 205 and mosses we think that some word carrying a wider connotation than
41
42 206 pollen seems to be called for. We would therefore suggest palynology from

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47 ⁵ Williams, the son of a mining engineer, was born in Cardiff, Wales and spent most of his life there apart from
48 clinical training at University College Hospital, London. Marrying Marjorie McVicar (1909-1970) in 1935, he
49 ran the first Asthma and Allergy Clinic in Wales from 1935 onwards (BHD 1986; Thomas 1986). He completed
50 his MD thesis on allergy to milk in 1937. Williams became acquainted with Hyde because he recognised the
51 link between pollen and allergies and sought a botanist with similar interests with whom to conduct research
52 into the subject. With the support of a Cardiff Council grant, Hyde and Williams founded the Asthma and
53 Allergy Research Unit – perhaps the first publicly funded asthma research unit in the UK. His cooperation with
54 Hyde led Williams to study mould spores as a cause of allergies and asthma. Williams rose to become
55 consultant physician to the Cardiff teaching hospitals and he was honoured by British, European and American
56 allergy academies. He was regarded as a fine teacher and clinician, and two of his four children became doctors.
57 He was considered to be an intensely modest, private man, a music lover and a keen angler, 'deeply interested in
58 people and their welfare' (ibid. p. 540).
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3 207 Greek *παλύνω* (*paluno*), to strew or sprinkle; cf. *παλι* (*palé*), fine meal;
4
5 208 cognate with Latin *pollen*, flour, dust): the study of pollen and other spores
6
7 209 and their dispersal, and applications thereof. We venture to hope that the
8
9 210 sequence of consonants p-l-n (suggesting pollen, but with a difference) and
10
11 211 the general euphony of the new word may commend it to our fellow
12
13 212 workers in this field. We have been assisted in the coining of this new word
14
15 213 by Mr. L.J.D. Richardson, M.A., University College, Cardiff." (H.A. Hyde
16
17 214 and D.A. Williams, July 15, 1944. Wales).
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22 23 24 216 **4. Archive gold⁶**

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26
27 217 Leopold John Dixon Richardson⁷ ('Reekie'; 1893-1979; Figure 1) was a gifted scholar,
28
29 218 showing a talent for Latin, Greek and Mathematics from an early age. He entered Trinity
30
31 219 College Dublin (TCD) in 1912 and went on to accumulate academic prizes⁸ as newspaper
32
33 220 entries record the growing list of dead from World War I and Dublin was experiencing the
34
35 221 Easter Rising (witnessed by Richardson⁹). By 1929, he had been awarded a TCD Fellowship
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41 ⁶ In September 2016, while lecturing at Amgueddfa Cymru National Museum Wales in Cardiff at a Quaternary
42 Research Association conference organised by HSP, KJE discussed the value of archives in studies of the
43 history of palynology. HSP said that an archive of Harold Hyde's correspondence existed in the Museum and
44 invited him to consult it. The opportunity to do so came in December 2016. KJE and HSP sat in the bowels of
45 the Museum and, being aware of the Hyde and Williams suggestion, it made sense to look for any
46 correspondence relating to Richardson. KJE's eyes alighted on a long letter from Richardson and he read it to
47 HSP. She excitedly exclaimed 'That's archive gold!' – hence the title of this section. The authors are
48 undertaking a wider investigation into Hyde (Pardoe & Edwards, in prep.).

49 ⁷ Richardson was born in Rathmines, Dublin, the son of a Protestant drapery warehouseman who hailed from
50 Dungannon, Co. Tyrone in the north of Ireland and a mother from County Louth in the south. Newspaper
51 reports indicate that he was an outstanding student at the High School in Dublin.

52 ⁸ At Trinity College Dublin, in the Junior Freshman class, he was placed in the First Rank for Mathematics
53 (*Dublin Daily Express* 7 May 1913) and a little over a year later he was named one of six Classical Scholars
54 (*Belfast News Letter* 9 June 1914). He graduated BA in 1916.

55 ⁹ In his book *Scholars and gypsies: an autobiography*, Hispanist Walter Fitzwilliam Starkie, writing of the
56 Easter Rising (Easter Monday, 24 April 1916) when armed Republicans rose up against British rule in Ireland,
57 recorded that his 'friend L.J.D. Richardson or Reekie...had been wandering about most of the day and had
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3 222 (an honour), having previously been ‘Lecturer in Greek in Queen’s University Belfast, and is
4
5 223 at present Lecturer in Latin in University College, Cardiff’ (*Northern Whig* 28 May 1929;
6
7 224 *Larne Times* 1 June 1929). Marrying an equally gifted woman¹⁰, he rose to become Professor
8
9 225 of Greek at Cardiff in 1946 and was Secretary of The Classical Association (1943-1963),
10
11 226 which dedicated its 60th society volume to him (CAP 1963)¹¹. His colleague Nick Fisher
12
13
14 227 (pers. comm.) was able to offer some interesting observations:

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16 228

17
18 229 I do remember well that his younger Greek colleagues Peter Walcot and
19
20 230 Bryn Rees were very fond of ‘Reekie’.... though I, as a very young
21
22 231 lecturer, found him imposing and a bit formidable – and hence didn't
23
24 232 benefit from getting to know him.... ‘He was a very traditional, and
25
26 233 highly respected, classicist, specialising in philology and textual criticism,
27
28 234 playing e.g. an important role in work on Linear B following the
29
30 235 decipherment and writing articles on many major authors, both Greek and
31
32 236 Latin; hence an ideal man to consult on finding Greek-based technical
33
34 237 terms.

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39 239 Richardson retired from the Cardiff Chair in 1958 and returned to Trinity College
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42 240 Dublin as honorary professor of Greek, although he seems to have retained a house in

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46 witnessed the proclamation of the Sinn Fein Republic at Nelson’s Pillar at noon. “It was,” he said, “very
47 unimpressive...” (Starkie 1963, pp. 144-145).

48
49 ¹⁰ Born Frances Petticrew Paton (1895-1955) the daughter of a Protestant clergyman in Ballymena, County
50 Antrim, she accrued numerous prizes from school and university (also Trinity College Dublin) in subjects as
51 diverse as Latin, English, Mathematics, Geography, French and German (graduating with First Class Honours in
52 Modern Languages; *Ballymena Observer* 27 December 1918) and later a qualification from the Sorbonne, Paris
53 (*Ballymena Observer* 24 February 1922). Leopold and Frances were married in 1925 and they subsequently had
54 two daughters.

55
56 ¹¹ Apart from national involvement, Richardson was also active in the Cardiff branch of the Classical
57 Association, for which he acted as honorary president and he organised many speakers and regular productions
58 of classical plays (Stray 2004).
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3 241 Cardiff¹². In 1965 he was made both O.B.E. (Order of the British Empire) in the New Year
4
5 242 Honours list (London Gazette 1965) and he was elected a Member of the Royal Irish
6
7 243 Academy. Frank Mitchell, renowned polymathic Quaternary scientist at Trinity College
8
9 244 Dublin, and who figured in a minor way in several issues of the *Pollen Analysis Circular*,
10
11 245 was certainly aware of Richardson. In his autobiographical memoir (Mitchell 1990, p. 56) he
12
13 246 observed that the classicist was ‘a man of very fertile brain’.

14
15
16 247 Richardson may have become acquainted with Hyde through their involvement with
17
18 248 the University where Hyde became an Honorary Lecturer in Economic Botany in 1931-1932.
19
20 249 Correspondence between the two dates from February 1934. Richardson’s abilities were
21
22 250 certainly recognised by Harold Hyde. On 9 June 1944, he wrote (Figure 4; Supplementary
23
24 251 Material Figure 2):

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26
27 252
28
29 253 Dear Richardson,
30
31 254 May I trouble you once again (as I did a few years ago) with one or two
32
33 255 matters in which the classical languages impinge on botany?
34
35 256 1. I am very much interested nowadays in the subject of pollen and its
36
37 257 dispersal. A subject that has now become so important that one feels the need
38
39 258 of a name for it. Please would you give me your opinion on the word
40
41 259 palynology? If you approve of it would you be so kind as to tell me exactly
42
43 260 how its derivation should be entered in a glossary? (I do not understand the
44
45 261 relation between *παλυνω παλυνον* and *παλλω*[There then follows a query
46
47 262 concerning colpi (see electronic copy for full text)]....My interest in these
48
49 263 words or proposed words is not purely academic: I want to use them in work
50
51 264 to be published and I should be most grateful if you would be so kind as to

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¹² ‘A passionate collector, Richardson never knowingly threw away any scrap of print, to such an extent in fact that at one time he was reduced to living in the attic of a house otherwise given over to books and newspapers’ (Chrimes 1983, p. 225).

1
2
3 265 give me the benefit of your expert opinion on them. But the matter isn't
4
5 266 urgent: if you are full up with exams please don't bother about it for the
6
7 267 moment. And if later you would like me to come and see you at the College
8
9
10 268 perhaps you would be so good as to give me a ring?

11
12 269 With kind regards

13
14 270 Yours sincerely,

15
16 271 H

17
18 272 Keeper of the Department of Botany

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21 273

22
23 274 Two days later, Richardson sent Hyde a postcard (Figure 5):

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25 275

26
27 276 Very pleased to have these fascinating problems of terminological coinage
28
29 277 come my way! Thank you. When the instant pressure of marking
30
31 278 examination papers passes in a couple of days, I shall try to deal with the
32
33 279 Science of Pollen. You didn't guess what a shrewd blow you struck me in
34
35 280 mentioning *πάλλω*, for I was attacked in *Glotta*¹³ (Munich) for my views on the
36
37 281 word in 1938 and the war prevented me from replying!

38
39 282

40
41 282 With kind regards,

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43 283

44
45 283 L.J.D. Richardson

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50 ¹³ This refers to a paper by Leonard Robert Palmer (1906-1984), a classicist at the University of Manchester
51 (later Professor of Comparative Philology at Oxford) in the journal *Glotta* (a German journal of Greek and Latin
52 historical linguistics, published in Göttingen, not Munich; Palmer 1938, in response to a paper published by
53 Richardson in 1936). Palmer was a controversial figure (*The Times* 29 August 1984) who worked on material as
54 diverse as the Linear B tablets, archaeological records of Minoan Crete and Chomskian linguistics. With him,
55 'Sometimes (though rarely) acuteness degenerated into perversity, and enthusiasm into polemics....and
56 occasionally made things worse by reacting violently.' He began his studies at the then University of South
57 Wales and Monmouthshire and may have met Richardson as a student. During the Second World War he
58 worked on code-breaking and translation for British naval intelligence at Bletchley Park. Richardson once
59 observed that 'classical graduates seem to have a special flair for certain hush-hush work' (Stray 2004, p. 161).
60

1
2
3 285 By the end of the following week, he had produced a hand-written, five-page letter
4
5 286 which addressed Hyde's enquiry (Figure 6; Supplementary Material Figure 3). This letter is
6
7 287 a model of erudition and the content relevant to this paper is as follows:
8

9
10 288

11
12 289

18.vj.'44

13
14 290

Dear Hyde,

15
16 291

You have given me a very hard nut to crack (now that the

17
18 292

examinations are done with and I have some time for you). The trouble is that,

19
20 293

while there is a noun *πάλη* ['finest meal', 'any very fine dust' e.g. pollen] and

21
22 294

a verb *πάλυνω* 'sprinkle', there isn't any convenient noun form *πάλυνον* such

23
24 295

as you quote, so that your palynology would mean 'the science of sprinkling'.

25
26 296

The -ology you want should be derived from *πάλη*. But here there are fresh

27
28 297

difficulties. It is not usual to use a Nominative Singular ending in *-έ* as a base,

29
30 298

but rather to look for an *-ῶ-* form: geology, geography are exceptions, probably

31
32 299

because *νή* is a monosyllable [note that when 'lunar geography' wants a name

33
34 300

it becomes selenography not seleneography, from *σελήνη*]. So on these

35
36 301

grounds palology ought to be preferred to paleology. But palology is, I think,

37
38 302

impossible. It is not significant enough, I mean immediately suggestive of its

39
40 303

origin *πάλη*; and, in any case, one would tend to associate it with *πάλος*,

41
42 304

taking it to mean 'the science of drawing lots'. We must therefore return to

43
44 305

paleology: this would certainly do, only for an unfortunate chance! Namely,

45
46 306

that there is already a well established science of palaeology¹⁴. It would be

47
48 307

intolerable to have both paleology and palaeology, sounding the same!

49
50 308

Furthermore, if you wanted to name that subsection of your subject in which

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52
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54
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59
60

¹⁴ The study of antiquities.

1
2
3 309 you are so eminent, viz. the study of the old pollen in bogs (am I right?), you
4
5 310 would be confronted with palaeopaleology (!), on the analogy of
6
7 311 palaeontology.
8
9
10 312 I can therefore only look around for some other alternatives.
11
12 313 Here are some suggestions for your choice:
13
14 314 (i) Paleology. Correct, but open to the objection outlines above.
15
16 315 (ii) Pollenology. Cuts the knot, but is a flagrant hybrid. Still there are sciences
17
18 316 like mineralogy i.e. mineralology. I don't approve of this, and I don't think
19
20
21 317 you will either.
22
23 318 (iii) Aleurology. This is from another Greek word, 'άλευρον for a fine wheaten
24
25 319 flour. 'Άλευρον seems to be used to connote a finer flour than 'άλφιτα 'barley-
26
27 320 groats', with which it is contrasted for its fineness. But I don't find 'άλευρον
28
29 321 used metaphorically of other dusts, in the way that πάλη is used. Probably a
30
31 322 stronger objection would be that that there are (I understand) derivatives already
32
33 323 for this word in botany. Isn't there a thing called aleurone? And I remember your
34
35 324 Miss Jenkins¹⁵ identifying a strange fungus which has control of my garage as Aleura
36
37 325 varia¹⁶! These (false) associations will probably rule out aleurology.
38
39 326 (iv) Achnology. This is from 'άχνη, 'chaff'. Radically the word seems to mean
40
41 327 any light substance that comes off the surface of a solid. Used mostly of chaff
42
43 328 that flies off in winnowing, but also of foam, froth, dew, smoke, bloom or
44
45 329 down on plums, brass filings, etc.
46
47 330 (v) Lachnology. From λάχνη 'woolly hair', 'down'. Used liked 'άχνη, but this
48
49 331 word suggests hairs too much, I think, for your purposes. It is used
50
51
52
53

¹⁵ Miss Eveline Jenkins (1893-1976) was the botanical artist in the Botany Department of the National Museum of Wales between 1927 and 1959; she specialised in fungi (Lazarus and Pardoe 2003).

¹⁶ *Aleuria varia* (Hedw.) Boud., now known as *Peziza varia* (Hedw.) Fr.

1
2
3 332 metaphorically of ‘the hair of trees’ i.e. foliage, like κόμη. Lachnology is not
4
5 333 as good, in my opinion, as achnology.

6
7 334 (vi) Leptology. The science of fine particles, pollen par excellence, from
8
9 335 λεπτός ‘fine’. Lepto- is used in a number of scientific terms already.

10
11 336

12
13
14 337 None of these are/is very satisfactory! So I hazard something else.

15
16 338 There is a collectual reduplicated form of πάλη found, namely Παιπάλη (also
17
18 339 in the form Παιοπάλη, once in Aristophanes but otherwise only in the ancient
19
20 340 lexicons of Suidas, Hesychius, Photius). Παιπάλη has a number of authentic
21
22 341 occurrences, as ‘first flour’, as well as rather more instances of a metaphorical
23
24 342 use = ‘subtleties’. Would you stand for paepalology? It sounds rather
25
26 343 forbidding (especially if you are going to be named a palaeopaepalologist!):
27
28 344 but it does (in a way) suggest πάλη and (certainly) Παιπάλη. (Not that so many
29
30 345 Grecians will know the word!).

31
32
33
34 346 I hope I haven’t failed you. Regard these as preliminary suggestions,
35
36 347 open to debate, if you would like to discuss them further. I should like to hear
37
38 348 your views; and we might be able to hammer out something satisfactory in the
39
40 349 end....

41
42
43 350

44
45 351 I have just bought out of loyalty, etc. – my young friend David Webb’s¹⁷
46
47 352 An Irish Flora (Dundalgan Press, Dundalk). I am not qualified to say anything
48
49 353 about it, except that the glossary of Irish terms for plants looks interesting.

50
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¹⁷ David Allardice Webb (1912-1994), noted botanist and eventually Professor of Systematic Botany at Trinity College Dublin. Apart from his *Flora* and heavy involvement with the *Flora Europaea* he also produced books on TCD’s history and its artwork. He was the ‘the *eminence grise* (and, in later years, *eminence blanc*) of Irish botany...a colossus with one foot firmly placed in his native country but the other planted in Britain and Europe... his amazing memory and his working knowledge of some 15 European languages made him both a major driving force and frankly, a somewhat feared figure...the most incisive mind of his generation in College’ (TCD 2017). Webb died in a car accident while en route to the herbarium at the University of Reading.

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3 354

Yours sincerely,

4
5 355

L.J.D. Richardson.

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7 3568
9 357

Four days later, a dejected Hyde replied (Figure 7; Supplementary Material Figure 4):

10
11 35812
13 359

22 June 1944

14
15 360

Dear Richardson,

16
17 361

Very many thanks for your postcard and for your very kind letter.

18
19 362

Evidently I could not possibly have consulted a more enthusiastic philologist

20
21 363

than yourself. I am very grateful indeed for all the thought and trouble you

22
23 364

have devoted to my problem.

24
25 365Of course I am very disappointed about palynology: I had hoped it26
27 366might be acceptable. I had in fact in my ignorance assumed that πάλλον28
29 367(quoted from the Lexicon) was a noun form corresponding with a Latin supine30
31 368

and meaning ‘that which is sprinkled’ or something of the kind. I gather that if

32
33 369I had been right in this respect palynology would have been satisfactory. As it34
35 370

is I suppose the twist of meaning from ‘the science of sprinkling’ to ‘the

36
37 371

science of that which is sprinkled’ would be too great? As I think I explained

38
39 372

in my first letter, I want a word which conveys not only pollen in the strict

40
41 373

botanical sense meaning the male spores of flowering plants but also other

42
43 374

similar material such as the spores of ferns and mosses (these bodies being

44
45 375

commonly included in pollen analyses and their dispersal – by the wind at

46
47 376

least – following the same laws as that of pollen proper).

48
49 377

I must admit that the possible alternatives do not appeal to me so much.

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- 1
2
3 378 1. Paleology would bear the same relation to palaeology as pedology does to
4
5 379 paedology. And is open, as you point out, to a similar objection: there is no
6
7 380 need to invent homophones.
8
9 381 2. Pollenology I had of course considered only to condemn it.
10
11 382 3. Aleurology would hardly do, because as you say, 'άλευρον has already
12
13 383 given rise to the derivative aleurone, meaning the grains of protein found in
14
15 384 seeds.
16
17 385 4. Achnology and Lachnology seem (may I say it?) to be a little far fetched,
18
19 386 especially the latter.
20
21 387 5. Leptology : λεπτός has been used by botanists very much in the sense of
22
23 388 'thin' rather than 'fine': its botanical derivatives all denote long thin structures.
24
25
26
27
28
29
30
31
32
33

390 And now,

391

- 34 392 6. Paepalology. It is obvious even to an illiterate like myself that this is a
35
36 393 brilliant suggestion but I don't really like it, partly I think because of the
37
38 394 double alliteration and partly because it lacks (to me at least) that
39
40 395 reminiscence of the English word which as the result of the sequence of
41
42 396 consonants, is present in p*l*nology.

45 397

46 You see I still have a hankering after my own offspring: is it quite
47 impossible? My new science is to be concerned not only with the material
48 bodies which are strewn but with the processes which bring [it] about and the
49 laws which govern their dispersal (their strewing in fact)....
50
51
52
53

54 401

Once again, thank you very much for your most interesting discussion.

56 402

If I hadn't been a botanist I should have liked to be a philologist.

57
58
59
60

1
2
3 403 Thank you too for letting me see your article in the Philosophical
4
5 404 Society's transactions. I wish I were sufficiently learned to understand it.
6

7 405 Yours sincerely,
8

9 406 H
10
11 407

12
13
14 408 The carbon copy of the letter is followed at its end by two lines of script in Pitman shorthand
15
16 409 (Figure 7). A transcription of this is of critical interest to this account: 'This was all drafted
17
18 410 by that rare conversation of this morning. I am very glad you are able to admit my plea in
19
20 411 favour of palynology.'
21

22
23 412 Seemingly then, Hyde had been able to persuade Richardson of the acceptability of
24
25 413 his favoured word, palynology. His advocacy of the neologism, spurred on by his love for his
26
27 414 'own offspring', was sufficiently cogent for Richardson (perhaps). Hyde, the philologist
28
29 415 manqué, was sufficiently delighted as to record his success in the shorthand appended to his
30
31 416 letter. Who knows what we should make of the fact that this was the last item in the file
32
33 417 containing their correspondence?
34
35

36 418

37 38 419 **5. Momentum and acceptance**

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41 420 Any residual doubts held by Classics scholar Leopold Richardson remain hidden to us, while
42
43 421 Harold Hyde, along with Williams, made his play to the *Circular*.
44

45
46 422 The new term palynology received a positive response and stimulated discussions
47
48 423 concerning the development of the new discipline. In late 1944 Hyde sought to promote the
49
50 424 term in a ballot for the naming of the prospective pollen and spore organization called for in
51
52 425 the pages of the *Circular*. His preference is to be found in a hand-written scrap of paper in the
53
54 426 Hyde correspondence collection held by Amgueddfa Cymru National Museum Wales (Figure
55
56 427 8) sent to Sears with a covering letter dated 2 September 1944:
57
58
59
60

1
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3 428

4
5 429 I suggest that the organisation should be an International association and, if
6
7 430 the new word meet [sic.] with approval, the I.A. of Palynologists. Meetings
8
9 431 should be held to coincide with International Botanical Congress – i.e. it may
10
11 432 be listed, quinquennially. Dues should cover the production of the circular as
12
13 433 a printed publication.
14

15
16 43417
18 435 I prefer19
20 436 PALYNOLOGY, on the analogy of Phytopathology.
2122
23 437

24
25 438 However, the relevant meeting (Cleveland, from 13 September 1944) reached a stale-
26
27 439 mate occasioned by Sears himself (Sears 1944b, p.2):
28

29
30 44031
32
33 441 TO BE OR NOT TO BE. – The Cleveland Conference considered the34
35
36 442 question of organization and decided by a margin of one vote not to37
38 443 organize at this time. The responsible vote was cast – a bit sheepishly39
40
41 444 – by your editor who confesses to a phobia towards organizations which42
43
44 445 outlive enthusiasm and justification....
4546
47 446

48
49 447 On page 1 of the re-named *Pollen and Spore Circular* – the 9th issue for the series –
50
51 448 dated 15 January 1945, Paul Sears said ‘We are still intrigued with the suggestion of
52
53 449 Professors Hyde and Williams that the term palynology be used to designate the whole
54
55 450 science which deals with strewn or scattered organic particles’ (Sears 1945a). This was
56
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1
2
3 451 viewed with some consternation by Hyde (1945a) who responded immediately in a letter to
4
5 452 Sears dated 7 March 1945 and published in issue No. 10 of the *Circular* (15 March 1945;
6
7 453 p.5):
8

9
10 454

11 455 PALYNOLOGY. – “Thank you for your reference to the word palynology
12
13
14 456 in Pollen and Spore Circular No. 9 (received today). May I say that Dr.
15
16 457 Williams and I did not intend this word to have so wide an application as
17
18 458 you have given it. We defined it as ‘the study of pollen and other plant
19
20 459 spores and their dispersal and application thereof’ and intended it to cover
21
22 460 the same ground as does the expression ‘pollen analysis’ as used by Erdtman.
23

24
25 461 “We cannot however object on logical grounds to the inclusion of
26
27 462 fungus and bacterial spores: they obviously fell within the definition (unless,
28
29 463 as some writers have suggested, both fungi and bacteria should be excluded
30
31 464 from the plant kingdom). But we would certainly not wish to take in e.g.
32
33 465 virus particles or dead organic dusts.” – H.A. Hyde (Mar. 7, 1945)
34
35

36 466

37
38 467 Overlooking the slight mis-quotation from the original submission in issue 8 of the *Circular*,
39
40 468 and his softening of the definition, Hyde was certainly being proprietorial about his coinage.
41
42 469 This was in process of being confirmed in several ways. The copy of the letter to Sears
43
44 470 (Supplementary Material Figure 5) actually contained a postscript – ‘I am sending under
45
46 471 separate cover a recent offprint from *The Museums Journal*’. On page 1 of that paper (Hyde
47
48 472 1944; titled ‘Pollen analysis and the museums’), Hyde had already ‘jumped the gun’ by
49
50 473 recording in an asterisked footnote that ‘In view of the admitted inadequacy of the expression
51
52 474 *pollen analysis* it has recently been proposed to substitute for it the new word *palynology*’ –
53
54 475 he does not say that he and Williams had done the proposing! At the end of the article he
55
56
57
58
59
60

1
2
3 476 states that ‘it is quite fitting that fundamental pollen research should be carried on (pending
4
5 477 the establishment of an institute of palynology?) in the national museums at least’ (p. 149).
6

7
8 478 In the same month that Hyde’s rejoinder to Sears appeared in the *Circular*, Hyde
9
10 479 published the definition of the new term, together with a preamble, in the ‘News and Views’
11
12 480 section of *Nature*¹⁸ for 3 March 1945 under the heading ‘Studies on pollen analysis’
13
14 481 (Anonymous 1945a). The entry makes no mention of Richardson. In the 21 April 1945
15
16 482 edition of *Nature*, and again in the ‘News and Views’ section, Hyde, it might be presumed,
17
18 483 produced an item (Anonymous 1945b) called ‘Pollen analysis and the museums’ in which we
19
20 484 are told that ‘H.A. Hyde...has published an informative article on the technique, history and
21
22 485 applications of pollen analysis’ (p. 489); the topic of museums research and an ‘institute of
23
24 486 palynology’ is reiterated. He then reproduced the first *Nature* item on page 2 of issue 11 of
25
26 487 the *Circular* which was distributed after 15 December 1945 (Hyde 1945b).
27
28

29
30 488 In the meantime, Hyde had written a letter to Erdtman (Figure 1) on 1 June 1945
31
32 489 (Figure 9) pushing ‘palynology’: ‘I hope you saw our suggestions re ‘palynology’ in Pollen
33
34 490 Analysis Circular Dec. 1944. It was repeated in Nature 3 March 1945.’ Erdtman certainly
35
36 491 had. He marked the relevant item in his copy of the *Circular* (Figure 3) with the annotation
37
38 492 ‘Ob!→’ (‘Ob’ probably standing for observe [or Swedish *observera*] – Erdtman often
39
40 493 commented on documents using the language of the original), while the diagonal stripes
41
42 494 painted in water colours on the reverse side of the pages are consistent with his artistic
43
44 495 activities (Edlund and Winthrop 2014). Furthermore, he produced a paper for *Ymer*, the
45
46 496 journal of the Swedish Society for Anthropology and Geography which would seem to be the
47
48 497 first article to refer to palynology in its title, albeit in Swedish – ‘Palynologisk forskning’
49
50 498 (Palynological research; Erdtman 1945]). Hyde may have been referring to this when he
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¹⁸ Hyde had sent a letter on behalf of himself and Williams, with the note to be published, to the editor of *Nature* on 26 January 1945 (Supplementary Material Figure 8). He was also selling the technique locally. In lecture notes for a presentation on 13 February 1945 to the University College of South Wales Biological Society, Hyde declares ‘Palynology is a new science with a great future’.

1
2
3 499 wrote to Harry Godwin, the ‘father’ of British pollen analysis (Edwards 1986, 2017; West
4
5 500 2014; Figure 1), on 5 September 1945, ending his letter ‘Erdtman has adopted palynology’.
6
7 501 Godwin replied on 3 October 1945 with a rather surly observation – ‘Yes, I see that Erdtman
8
9 502 has adopted Palynology it is quite a good word, but I’m not sure of the need for it. My guess
10
11 503 is that it will stick however’ (Figure 10; Supplementary Material Figures 6 and 7). On the
12
13 504 first page of the *Pollen and Spore Circular* for 15 December 1945, we read (Sears 1945b):
14
15
16

505

17
18 506 COMMUNICATION RESTORED. Among the most welcome material
19
20 507 received in recent months is G. Erdtman’s “Literature on Pollen-Statistics
21
22 508 and Related Topics Published 1944,” bearing the inscription: “Professor
23
24 509 Paul B. Sears with compliments and kind regards. Please insert a line in
25
26 510 your next Pollen Analysis Circular that I should be glad to receive reprints
27
28 511 on ‘Palynology’ – this seems to be a very good term!
29
30
31

512

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33
34 513 On 16 June 1946, Erdtman wrote to New Zealand palynologist Lucy May Watson
35
36 514 Smith (née Cranwell; 1907-2000; Davis 2017), then resident in Washington D.C.: ‘I hope you
37
38 515 will remain in contact with me in any questions on “palynology” (the new term for pollen and
39
40 516 spore science!)’. That year, a paper by Erdtman (1946), a Dutch thesis (Eshuis 1946) and a
41
42 517 Belgian article (Florschütz & van Oye, E. L., 1946) had the words palynologiska,
43
44 518 palynologisch and palynologique respectively in their titles. By 1947, Erdtman had changed
45
46 519 the title of his bibliometric series in *Geologiska Föreningens i Stockholm Förhandlingar* to
47
48 520 ‘Literature on palynology’. Apart from this, the first use of the word in the title of an English
49
50 521 language publication may also be that of Erdtman (1947; ‘Do you collect pollen? The reasons
51
52 522 why others gather and study it given in a survey of the newly named science of palynology’)
53
54
55 523 in the *Journal of the New York Botanical Garden*.
56
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3 524 In 1947, Helmut Gams (1893-1976) of the University of Vienna, at the start of his
4
5 525 paper ‘Wesen und Stand der Palynologie’ (Nature and standing of palynology), quotes the
6
7 526 origins of the word as proffered by the ‘englischen’ (sic.; Englishmen) Hyde & Williams
8
9 527 (1944). It is interesting to note that a year later, Stanley Adair Cain (1902-1995), then of the
10
11 528 University of Michigan, also thought it necessary to provide a potted history of the word
12
13 529 palynology in a footnote to a paper in *Science*, drawing comfort perhaps from the fact that
14
15 530 Erdtman ‘has accepted the term’ (Cain 1948, p. 115). In his paper ‘Palynology. Aspects and
16
17 531 prospects’, Erdtman (1948, p. 467) felt able to claim that ‘This term [palynology] was
18
19 532 unanimously accepted by the workers in this science and will likely contribute towards a
20
21 533 more common interest in its wide domains’. Godwin seems not to have used the term before
22
23 534 1951 and he may only have ever used the word twice in the title of a paper (Godwin 1951,
24
25 535 1967). It may be that he was somewhat envious of Hyde and Williams’ introduction of the
26
27 536 word given his acerbic response to Hyde’s letter as noted above.
28
29
30
31

32 537 Hyde remained protective of his term, and when, as late as 1956, Bergen botanist
33
34 538 Knut Fægri (1909-2001; Figure 1) said that ‘The term “palynology” was coined by Hyde and
35
36 539 Williams to cover all work with pollen grains and spores’ (Fægri 1956, p. 639¹⁹), Hyde put
37
38 540 pen to paper (letter dated 13 March 1957):
39
40

41 541

42
43 542 Dear Fægri,

44
45 543 Thank you for the two offprints you sent me recently. I am no
46
47 544 polemicist and I am not spoiling for a fight but I must point out that your
48
49 545 assessment of the meaning of the word palynology is inadequate in that you
50
51 546 ignore the words “and their dispersal” included in my original definition.
52
53

54 547 This definition was expressly framed so as to include the collection and
55
56
57

58 ¹⁹ Fægri also cited the year of publication in the *Circular* as 1943 rather than 1944.
59
60

1
2
3 548 analysis of atmospheric samples....
4

5 549
6

7 550 It might be thought that Fægri's words did not preclude a consideration of dispersal, but the
8

9 551 Norwegian was self-deprecatingly emollient (letter dated 15 March 1957):
10

11 552
12

13
14 553 Dear Hyde,
15

16 554 You are completely right, and I am sorry for the omissions. Queer,
17

18 555 though, I am preparing a paper on "aeropalynology" myself!
19

20
21 556 Sincerely yours
22

23 557 Knut Fægri
24

25 558
26

27 559 Strangely, no editions of the seminal *Textbook of (Modern) Pollen Analysis* by Fægri
28

29 560 and Iversen (1950, 1989) discuss or much use the word palynology – indeed, the only index
30

31 561 entry in the 4th edition (1989) – 'Palynology (definition) 7' – results in a disappointing
32

33 562 search on the said page; it appears twice on page 6, with neither instance being related to a
34

35 563 definition!
36
37

38 564 Hyde remained proprietorial even in later years, for example, Hyde (1969, p. 579)
39

40 565 began 'The author reasserts his original definition of palynology', later adding 'Palynology
41

42 566 was widely defined by the writer....as the study of plant spores and their dispersal and
43

44 567 applications thereof.' He went on to state that 'It has tended to become limited rather to the
45

46 568 study of pollen grains in relation to stratigraphical – especially quaternary – geology, but the
47

48 569 original definition with its wider connotation still stands. The word 'spore' as here understood
49

50 570 includes pollen grains, fungus spores and other microscopic plant disseminules such as
51

52 571 hyphal fragments.... algal cells....and lichen soredia....but not bacteria.' As shown above,
53

54 572 this broadening of the definition was presaged in the letter to Sears dated 7 March 1945. The
55
56
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1
2
3 573 Hyde (1969) paper omitted mention of the 1944 Hyde and Williams item, although he does
4
5 574 cite the Anonymous (1945) authorship as by Hyde and Williams. Collectively, this might be
6
7 575 interpreted cynically as an attempt by Hyde to take full credit for the original definition,
8
9 576 and/or he perhaps felt that the *Pollen Circular* did not count as a publication worthy of
10
11 577 citation.

12
13
14 578 In parallel with the foregoing (and reprising earlier discussions in this paper on the
15
16 579 structure of the fields contributing to palynology) there were various society contributions.
17
18 580 Erdtman organised a Palynological Conference in 1950 at Bromma, Stockholm (Figure 11),
19
20 581 associated with the VII International Botanical Congress. In a letter to Godwin dated January
21
22 582 1950, Hyde referred to this meeting rather coolly as ‘Erdtman’s foregathering’. The final
23
24 583 *Pollen and Spore Circular* (No. 18, January 1954 and edited by Leonard Wilson) contained a
25
26 584 report on the ‘First [U.S.] Palynology Conference’ (Yale, June 1953) and spoke of a meeting
27
28 585 to establish an International Commission on Palynology under the organizational leadership
29
30 586 of Gunnar Erdtman and Madeleine Van Campo (editor of the Paris-based journal *Pollen et*
31
32 587 *Spores* [produced 1959-1989]). The American Association of Stratigraphic Palynologists
33
34 588 (AASP; now AASP – the Palynological Society) was founded in 1967. The International
35
36 589 Commission for Palynology (ICP) began in 1977 and became the International Federation of
37
38 590 Palynological Societies (IFPS) in 1984 (Demchuk & Riding 2008; Traverse 2007; Riding et
39
40 591 al. 2016).

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42
43 592 In a letter to Hyde dated 8 December 1954, concerned *inter alia* with the meeting
44
45 593 which had been held in Paris in July 1954, Knut Fægri recorded that ‘I have more and more
46
47 594 come to the conclusion that the section of palynology was a mistake. Palynology as a
48
49 595 technique involves specialists in so many other branches of science that to collect them gives
50
51 596 a completely incoherent congregation.’ Similar sentiments were to be recorded in a later
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53 597 paper (Fægri 1956), where he also said that the term palynology is ‘convenient and has been
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3 598 widely accepted, but it must not be taken to indicate that palynology should have a status as a
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5 599 science of its own. This it is not....' (p. 639).
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7
8 600 In this instance, the *zeitgeist* would seem to have escaped Fægri. In 1954, Erdtman
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10 601 began the journal *Grana Palynologica*, edited from his laboratory in Stockholm. In 1970 it
11
12 602 saw a name change to *Grana* with various subtitles (*An International Journal of Palynology*;
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14 603 *A Journal of Palynology and Aerobiology*); the *Journal of Palynology* from Lucknow first
15
16 604 appeared in 1965 (this journal eventually absorbed the *Palynological Bulletin* which had also
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18 605 been overseen from the Palynological Society of India between 1965 and 1970); the *Review*
19
20 606 *of Palaeobotany and Palynology* began life in 1967 when it was edited from Utrecht; while
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22 607 the journal *Palynology* was renamed from *Geoscience and Man* in 1977.
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27 609 **6. Conclusions**

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29 610 This has been a story of people, a discipline and its naming – much of it taking place in the
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31 611 midst of a world war. At its core is a *dramatis personae* of two wise men (three if David
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33 612 Williams is included) – or is it the stubborn botanist versus the purist classicist? Harold Hyde
34
35 613 certainly had the vision to move beyond Ernst Antev's desire for a new name and suggestion
36
37 614 of 'pollen science' (supported by Paul Sears and Orville Dahl) and to be more prescriptive
38
39 615 than was evident in Kirk Bryan's time-constrained proposal of 'micro-paleobotany'. Sears
40
41 616 expressed his post-pollen-scientific interest in the word palynology, but arguably it was
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43 617 Erdtman's renown, influence and imprimatur which sealed the bid. Richardson, meanwhile,
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45 618 has been written out of the word's history other than to be acknowledged once in print after
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47 619 his academic objections had been questioned rather than ignored. Perhaps most of us would
48
49 620 be grateful that Hyde fought his corner – to be called a palynologist might be thought
50
51 621 preferable to answering to palaeopaepalologist, even if we marvel at Richardson's erudition.
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56 622 Once the new word was unleashed, Hyde set out to promote it successfully and its wider
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3 623 adoption sustained the momentum. Although Hyde does appear to have allowed some
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5 624 evolution of his definition, it is notable how it has diversified and been redefined between
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7 625 different sub-disciplines. The most notable group could be identified as the
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10 626 palaeopalynologists, as exemplified by the scope of this journal²⁰, where the Hyde and
11
12 627 Williams ‘purist’ definition has been significantly extended to include a wide range of
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14 628 organic remains.

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21 631 **Acknowledgements**

22
23 632 For access to archival information, we would like to thank Amgueddfa Cymru National
24
25 633 Museum Wales (Hyde papers and correspondence), Nigel Morgan of Cardiff University
26
27 634 Library, Maria Asp and the Center for History of Science, Royal Swedish Academy of
28
29 635 Sciences and Pia Östensson and the Swedish Museum of Natural History (Erdtman papers),
30
31 636 along with those bodies granting permission to use the portrait photographs. We are grateful
32
33 637 to Anne Bryan for the photograph of her father (D.A. Williams) and the valuable background
34
35 638 information, to Angela Lord for advice on Greek orthography and to Pat Wiltshire for Pitman
36
37 639 shorthand interpretation. We are indebted to Richardson’s former colleague, Nick Fisher, for
38
39 640 drawing the Starkie autobiography to our attention. The Royal Irish Academy, the Classical
40
41 641 Association (Claire Davenport) and Trinity College Dublin (Aisling Lockhart) provided
42
43 642 additional information on Richardson. We are appreciative of comments from Ed Schofield
44
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48
49 ²⁰ The *Palynology* journal webpage speaks of ‘covering all aspects of the science of organic microfossils and
50 their modern counterparts....We accept papers on both pre-Quaternary and Quaternary palynology, and
51 palaeobotany. Articles across the entire range of palynomorph groups and geological ages are welcomed’
52 (<http://www.tandfonline.com/action/journalInformation?show=aimsScope&journalCode=tpal20>); while the
53 AASP – Palynological Society website states that ‘*Palynology* is the study of pollen, spores, dinoflagellates, and
54 other microscopic "palynomorphs." (<http://palynology.org/what-is-palynology/>) and ‘Palynomorphs include
55 both plant and animal structures that are microscopic in size....In the strict sense, palynomorphs are recognized
56 as microscopic structures that are abundant in most sediments and sedimentary rocks, and are resistant to the
57 routine pollen-extraction procedures....In a broader sense, other microfossils sometimes are given "courtesy
58 appointments" as "palynomorphs" even they do not survive routine pollen-extraction procedures.’
59 (<http://palynology.org/palynomorphs/>).

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3 643 and Evan Zimroth on an early draft of the paper, to two referees, and we thank Jim Riding for
4
5 644 his encouragement.
6

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10 646 **Disclosure statement**

11
12 647 No potential conflict of interest was reported by the authors.
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17 649 **References**

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3 877 **Figure Captions**
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7 879 Figure 1. Pictures of some of the individuals discussed in this paper. Sources: Sears (1944) –
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10 880 Oklahoma Hall of Fame; Bryan (c. 1940?) – Savoy Studio, Cambridge, Mass./Geological
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12 881 Society of America; Wilson (1953) – photographic collection of A.T. Cross/Geological
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14 882 Society of America; Antevs (c. 1930?) – University of Arizona, Antevs Library; Dahl (c.
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16 883 1935?) – courtesy of University of Minnesota Archives, University of Minnesota – Twin
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18 884 Cities; Hyde (1922) – Amgueddfa Cymru National Museum Wales; Williams (c. 1950) –
19
20 885 Ann Bryan; Richardson (c. 1960?) – The Classical Association; Erdtman (1921) – Jonsell
21
22 886 (2007; Svenska Botaniska Föreningen); Godwin (c. 1960?) – F.T.N. Elborn, Department of
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24 887 Plant Sciences, University of Cambridge; Fægri (c. 1960) – Department of Biology,
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26 888 University of Bergen.
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31
32 890 Figure 2. The masthead and start of the *Pollen Analysis Circular* No. 1.
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36 892 Figure 3. The Hyde & Williams proposal of the word palynology in the *Pollen Analysis*
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38 893 *Circular* No. 8, page 6. The beginning of Kirk Bryan's suggestion of the term micro-
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40 894 paleobotany follows. This is taken from Gunnar Erdtman's annotated copy (see text for
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42 895 further details).
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46 897 Figure 4. Portions of a letter dated 9 June 1944 from Harold Hyde to Leopold Richardson
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48 898 concerning the word palynology (see Supplementary Material Figure 2 for full text).
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52 900 Figure 5. Postcard dated 11 June 1944 from Leopold Richardson to Harold Hyde stating his
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54 901 willingness to assist linguistic problems of pollen terminology.
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3 903 Figure 6. Portions of a letter dated 18 June 1944 from Leopold Richardson to Harold Hyde
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5 904 (see Supplementary Material Figure 3 for full text).
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10 906 Figure 7. Portions of a 5-page letter dated 22 June 1944 from Harold Hyde to Leopold
11 Richardson and dealing with the coining of the word palynology and various alternatives with
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13 907
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15 908 Pitman shorthand at the end of the letter (see Supplementary Material Figure 4 for full text).
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20 910 Figure 8. Handwritten note from Harold Hyde to Paul Sears concerning the naming of a
21 pollen and spore organization, sent 2 September 1944.
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27 913 Figure 9. Letter dated 1 June 1945 from Harold Hyde to Gunnar Erdtman including mention
28 of the word palynology.
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35 916 Figure 10. Fragments of letters between Harold Hyde (dated 5 September 1945) and Harry
36 Godwin (dated 3 October 1945) (see Supplementary Material Figures 6 and 7).
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43 919 Figure 11. Members of the 'first international meeting of palynologists, the Conference of
44 Palynology, Stockholm (Bromma) July 1950' (p.100, Erdtman et al. 1950; published by
45 permission of Geologiska föreningen). Note the following delegates cited in the current
46 paper: Gunnar Erdtman, Harold Hyde, Harry Godwin, Johs. Iversen, Knut Fægri, Frank
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3 925 **Supplementary Material Figure Captions**
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7 927 Supplementary Material Figures 1a and 1b. Letter dated 15 July 1944 from Harold Hyde to
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9 928 Paul Sears. The telephone number Llandaff 1078 is that at Leopold Richardson's home.
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13 930 Supplementary Material Figures 2a and 2b. Letter dated 9 June 1944 from Harold Hyde to
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15 931 Leopold Richardson.
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19 933 Supplementary Material Figures 3a-3e. Letter dated 18 June 1944 from Leopold Richardson
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21 934 to Harold Hyde.
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25 936 Supplementary Material Figures 4a and 4b. Letter dated 22 June 1944 from Harold Hyde to
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27 937 Leopold Richardson.
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31 939 Supplementary Material Figures 5a and 5b. Letter dated 7 March 1945 from Harold Hyde to
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33 940 Paul Sears.
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37 942 Supplementary Material Figures 6a and 6b. Letter dated 5 September 1945 from Harold Hyde
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39 943 to Harry Godwin (dated 3 October 1945).
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43 945 Supplementary Material Figures 7a and 7b. Letter dated 3 October 1945 from Harry Godwin
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45 946 to Harold Hyde.
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3 948 Supplementary Material Figure 8. Covering letter to *Nature* dated 26 January 1945 from

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5 949 Harold Hyde and David Williams.

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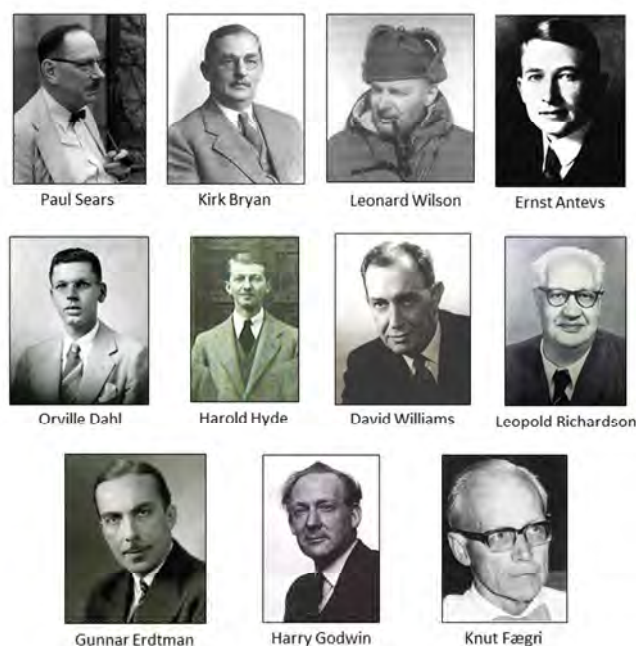


Figure 1. Pictures of some of the individuals discussed in this paper. Sources: Sears (1944) – Oklahoma Hall of Fame; Bryan (c. 1940?) – Savoy Studio, Cambridge, Mass./Geological Society of America; Wilson (1953) – photographic collection of A.T. Cross/Geological Society of America; Antevs (c. 1930?) – University of Arizona, Antevs Library; Dahl (c. 1935?) – courtesy of University of Minnesota Archives, University of Minnesota – Twin Cities; Hyde (1922) – Amgueddfa Cymru National Museum Wales; Williams (c. 1950) – Ann Bryan; Richardson (c. 1960?) – The Classical Association; Erdtman (1921) – Jonsell (2007; Svenska Botaniska Föreningen); Godwin (c. 1960?) – F.T.N. Elborn, Department of Plant Sciences, University of Cambridge; Fægri (c. 1960) – Department of Biology, University of Bergen.

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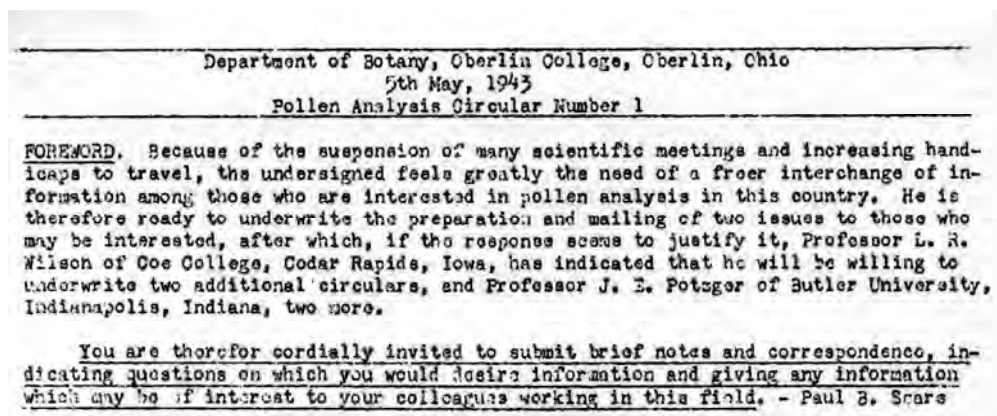


Figure 2. The masthead and start of the Pollen Analysis Circular No. 1.

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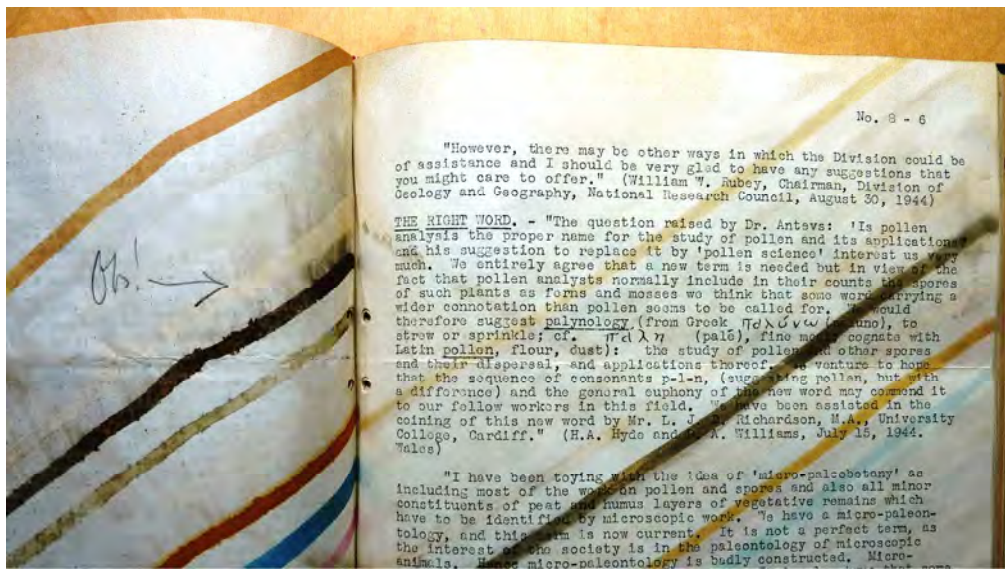


Figure 3. The Hyde & Williams proposal of the word palynology in the Pollen Analysis Circular No. 8, page 6. The beginning of Kirk Bryan's suggestion of the term micro-paleobotany follows. This is taken from Gunnar Erdtman's annotated copy (see text for further details).

503x282mm (180 x 180 DPI)

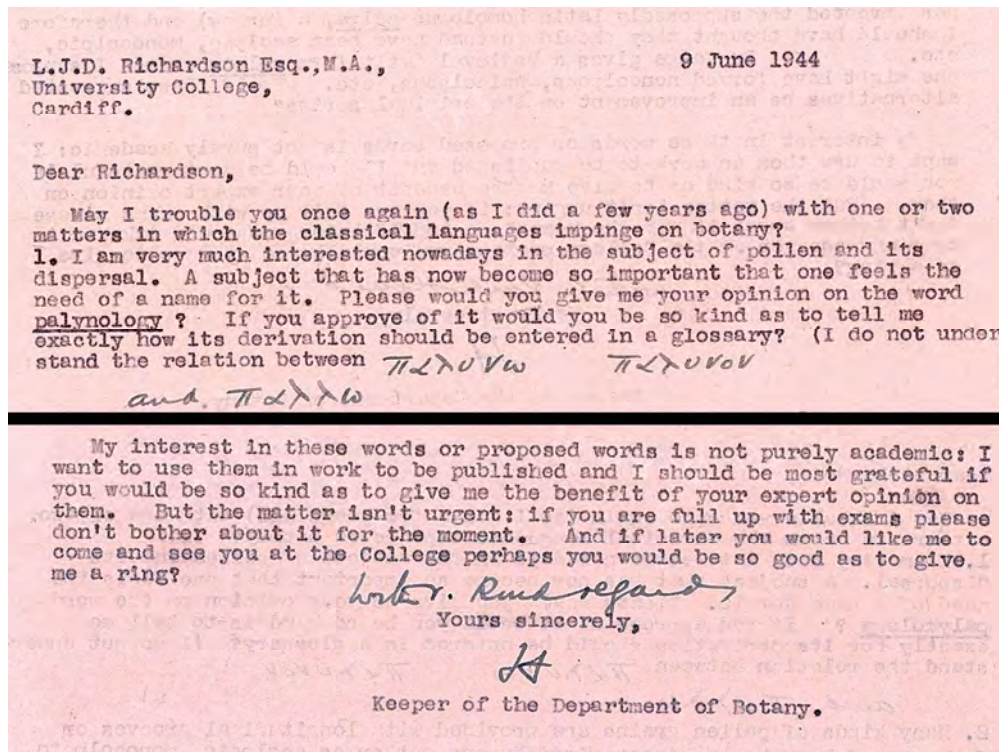


Figure 4. Portions of a letter dated 9 June 1944 from Harold Hyde to Leopold Richardson concerning the word palynology (see Supplementary Material Figure 2 for full text).

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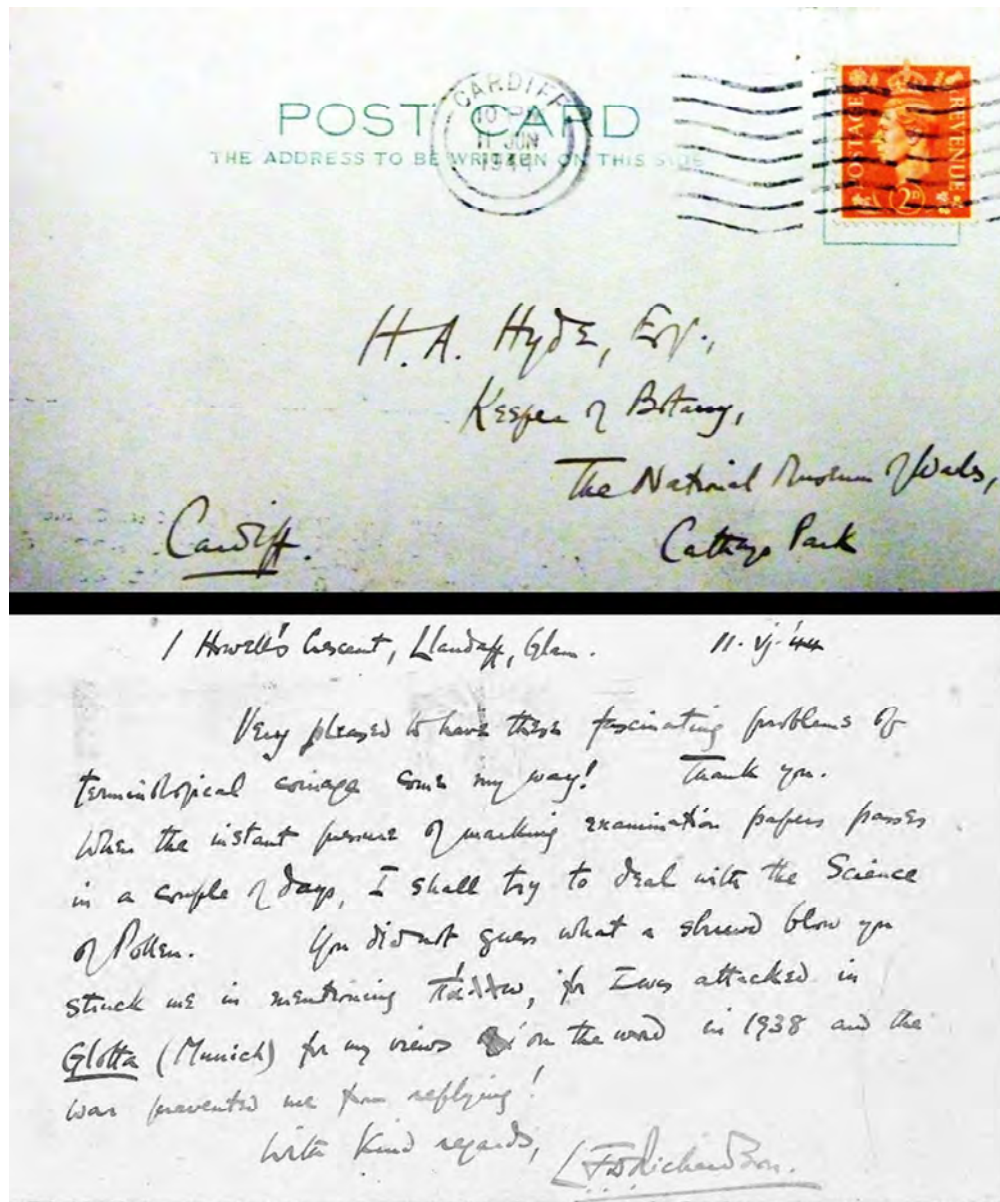


Figure 5. Postcard dated 11 June 1944 from Leopold Richardson to Harold Hyde stating his willingness to assist linguistic problems of pollen terminology.

141x169mm (150 x 150 DPI)

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 Hon. Secretaries: J. J. R. BRIDGE, C.B.E., M.A., MUTCOMBE, FAIRFIELD PARK, BATH.
 L. J. RICHARDSON, M.A., UNIVERSITY COLLEGE, CARDIFF.

1 Harold's Cross,
 Llandaff,
 Glam.
 18.6.44.

Dear Hyde,

You have given me a very hard nut to crack (now that the examinations are done with and I have some time for you!). The trouble is that, while there is a noun τάξιν ['first meal', 'any very fine part' eg. pollen] and a verb τάξις 'sprinkle', there isn't any convenient noun form τάξις such as you quote, so that your palynology would mean 'the science of sprinkling'. The -ology you want should be derived from τάξιν. But here there are great difficulties. It is not usual to use a Nominative Singular ending in -τις as a base, but rather to look for an -ο- form: geology, γεωγραφία are exceptions, probably because γη is a monosyllable [although when 'linear geography' wants a name it bears σεισμολογία not σεισολογία, from σεισμός]. So on these grounds palology ought to be preferred to palaeology. It is not significant enough, I mean immediately suggestive of its origin τάξιν: and, in any case, one would tend to associate it with τάξιν, taking it to mean 'the science of drawing lots'. We must therefore return to palaeology:

I have just brought out of loyalty, etc. - by
 young friend David Webb's An Irish Flora (Dundalk Press, Dundalk). I am not qualified to say anything about it, except that the glossary of Irish terms for plants looks interesting.

Yours sincerely,
 L. Richardson.

Figure 6. Portions of a letter dated 18 June 1944 from Leopold Richardson to Harold Hyde (see Supplementary Material Figure 3 for full text).

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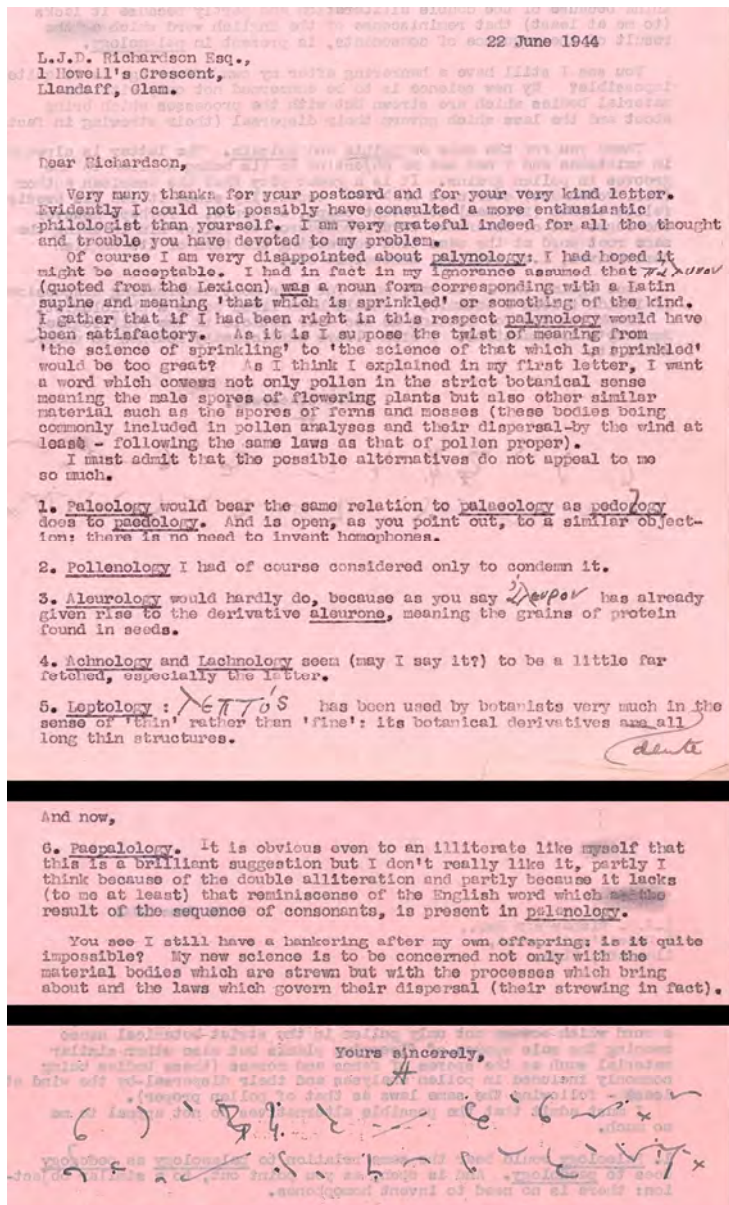


Figure 7. Portions of a 5-page letter dated 22 June 1944 from Harold Hyde to Leopold Richardson and dealing with the coining of the word palynology and various alternatives with Pitman shorthand at the end of the letter (see Supplementary Material Figure 4 for full text).

173x287mm (150 x 150 DPI)

Mrs. Davis Please would you type in, in the Ballot
 sheet
 'main' type of organization:
 I suggest that the organization should be
 an International Association and, if the
^{in full} word meet with approval, the I. A. of
Palynologists. meetings should be held
 to coincide with International Botanical
 Congresses ^{i.e., it may be held, quinquennially} & dues should cover the production
 of the circular as a printed publication.

I prefer
 PALYNOLOGY, on the analogy of Phytopathology.

Figure 8. Handwritten note from Harold Hyde to Paul Sears concerning the naming of a pollen and spore organization, sent 2 September 1944.

168x144mm (300 x 300 DPI)

AMGUEDDFA GENEDLAETHOL CYMRU

TELEPHONE 5873

DEPARTMENT OF BOTANY,
NATIONAL MUSEUM OF WALES,
CARDIFF.

1 June 1945

Dr. G. Erdtman,
Västerås,
Sweden.

Dear Dr. Erdtman,

Thank you very much for the six separates I received from you recently through the British Council. I hope you have received an offprint of Studies in Atmospheric Pollen I. A daily census of pollens at Cardiff 1942 by H.A.H., and D.A. Williams New Phytol. 43. 49-61 (1944). I have also published 'Pollen analysis and the Museums' (Museums Journal Dec. 1944.). I will try to send you a copy.

Studies II 'Diurnal Variation in the Incidence of Grass Pollen' by the same authors is in the press (New Phytol. 44) and I will ask the publishers to send you an offprint.

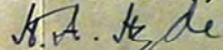
I hope you saw our suggestion re 'Palynology' in Pollen Analysis Circular Dec. 1944. It was repeated in Nature 3 March 1945. We also had a letter on Tilia pollen in Nature 14 April 1945.

I find that I now have a complete set of your bibliographies on pollen statistics except for the years 1937, 1938 and 1939. If you still have

offprints of the missing ones and could spare them I should be most grateful.

With all good wishes,

Yours sincerely,



Keeper of the Department of Botany.

Figure 9. Letter dated 1 June 1945 from Harold Hyde to Gunnar Erdtman including mention of the word palynology.

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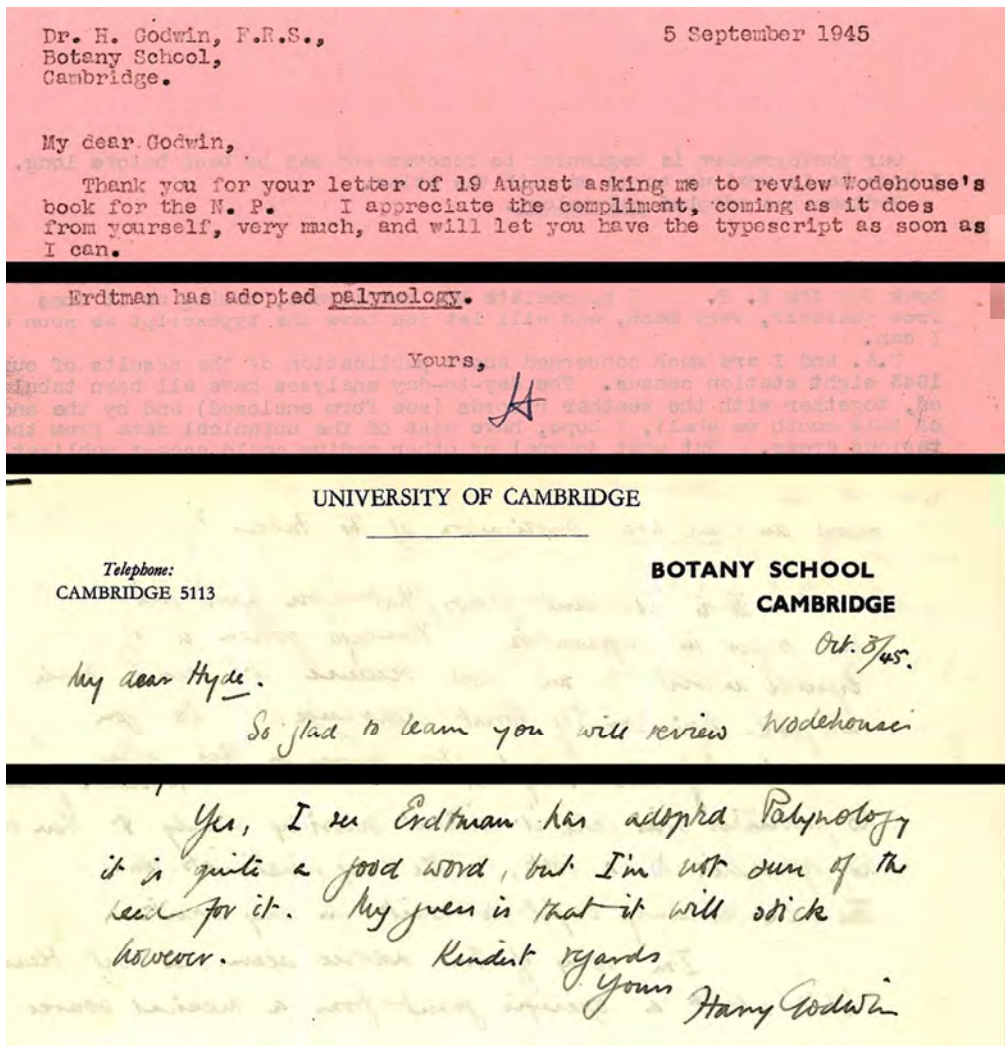


Figure 10. Fragments of letters between Harold Hyde (dated 5 September 1945) and Harry Godwin (dated 3 October 1945) (see Supplementary Material Figures 6 and 7).

183x190mm (150 x 150 DPI)

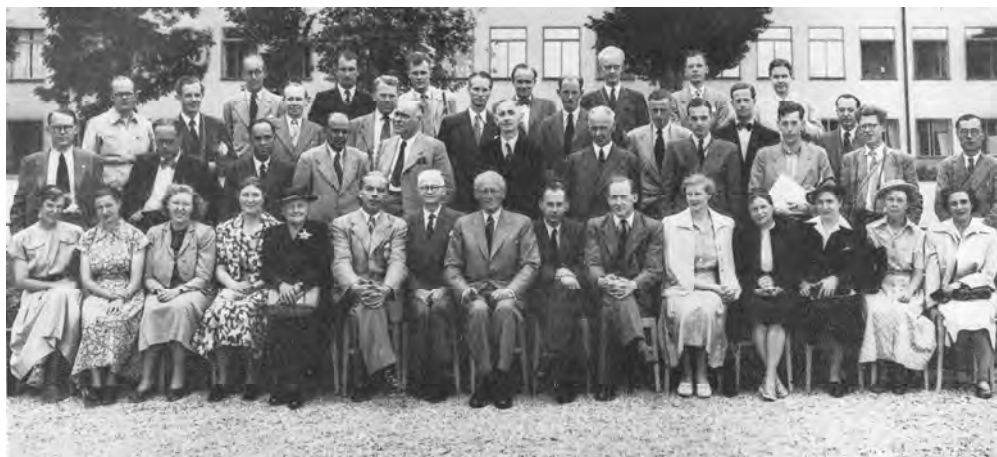


Fig. 1. Members of the Palynological Conference 1950 assembled at Bromma.

Front row (left to right): Mrs. Florin (Södertälje), Mrs. Laycock (Auckland, N.Z.), Mrs. Nilsson (Lund), Dr. Elizabeth Knox (Edinburgh), Prof. Elise Holmano (Vienna), Erdtman (Stockholm; recorder), Hyde (Cardiff; v. president), Potonié (Düsseldorf; v. president), Fribas (Göttingen; president), Godwin (Cambridge; v. president), Mrs. Erdtman, Dr. Anna Maurizio (Liebefeld), Dr. Madeleine van Campo Duplan (Paris), Baroness Ebba Hult De Geer (Stockholm), Mrs. Pinto da Silva (Sacavém).

Second row: Iversen (Copenhagen), Fægri (Bergen), Sitcholev (Lucknow), Chowdhury (Dohra Dun), Thomson (Liblar-Köln), Wetzel (Eutin), Flosschütz (Velp), Waterbolk (Groningen), Mitchell (Dublin), van der Hammen (Leiden), Hst (Lucknow).

Back rows: Hammer (Lyngby), Schwan (Stockholm), Hedberg (Uppsala, v. recorder), Fröman (Stockholm), Strada (Lonn), Nilsson (Lund), Donner (Helsingfors), Fries (Uppsala), Terasmäe (Uppsala), Tallantire (Dublin), Danielsen (Bergen), Müller (Maracaiho), Dahl (Minneapolis), Hoeg (Oslo), Polunin (Montreal), Pinto da Silva (Sacavém).

Figure 11. Members of the 'first international meeting of palynologists, the Conference of Palynology, Stockholm (Bromma) July 1950' (p.100, Erdtman et al. 1950; published by permission of Geologiska föreningen). Note the following delegates cited in the current paper: Gunnar Erdtman, Harold Hyde, Harry Godwin, Johs. Iversen, Knut Fægri, Frank Mitchell, Orville Dahl.

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15 JULY
30 June 1944

Professor Paul B. Sears, Editor Pollen Analysis Circular,
Oberlin University,
Oberlin,
Ohio,
U.S.A.

Dear Professor Sears,

We wish to thank you for the copies of Pollen Analysis Circular No. 6 (15 March 1944) which have reached the two of us respectively. The question raised by Dr. Antevs: 'Is pollen analysis the proper name for the study of pollen and its applications?' and his suggestion to replace it by 'pollen science' interest us very much. We entirely agree that a new term is needed but in view of the fact that pollen analysts normally include in their counts the spores of such plants as ferns and mosses we think that some word carrying a wider connotation than pollen seems to be called for. We would therefore suggest palynology (from Greek (paluno), to strew or sprinkle; cf. (pale), fine meal; cognate with Latin pollen, flour, dust): the study of pollens and other spores and their dispersal, and applications thereof. We venture to hope that the sequence of consonants p-l-n, (suggesting pollen, but with a

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Llandaff
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12 JUL 21
1958

difference) and the general euphony of the new word may commend it to our fellow workers in this field.

We have been assisted in the coining of this new word by Mr. L.J.D. Richardson M.A. of University College, Cardiff.

H.A.H

National Museum, Cardiff.

D.A.W

Llandough Hospital, Cardiff.

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9 June 1944

L.J.D. Richardson Esq., M.A.,
University College,
Cardiff.

Dear Richardson,

May I trouble you once again (as I did a few years ago) with one or two matters in which the classical languages impinge on botany?

1. I am very much interested nowadays in the subject of pollen and its dispersal. A subject that has now become so important that one feels the need of a name for it. Please would you give me your opinion on the word palynology? If you approve of it would you be so kind as to tell me exactly how its derivation should be entered in a glossary? (I do not understand the relation between $\pi\lambda\upsilon\nu\omega$ $\pi\lambda\upsilon\nu\upsilon\omega$
and $\pi\lambda\lambda\omega$)

2. Many kinds of pollen grains are provided with longitudinal grooves or furrows and have been characterised by one author as *accolpate*, *monocolpate*,

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tricolpate according to the number of furrows. These words are stated to have been derived from the Gr. *κόλπος* *afunon* (a second author has invented the supposedly Latin homologue *colpa*, a furrow) and therefore I should have thought they should instead have been acolpic, monocolpic, etc. Du Cange gives a Medieval Latin form *colpus* whence I suppose one might have formed noncolpous, unicolpous, etc. Would these suggested alternatives be an improvement on the original series?

My interest in these words or proposed words is not purely academic: I want to use them in work to be published and I should be most grateful if you would be so kind as to give me the benefit of your expert opinion on them. But the matter isn't urgent: if you are full up with exams please don't bother about it for the moment. And if later you would like me to come and see you at the College perhaps you would be so good as to give me a ring?

Walter Rind
Yours sincerely,
W
Keeper of the Department of Botany.

124x77mm (300 x 300 DPI)

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L. J. D. RICHARDSON, M.A., UNIVERSITY COLLEGE, CARDIFF.

1 Hawk's Crescent,
Llandaff,
Glam.
18. vi. 44.

Dear Hyde,

You have given me a very hard nut to crack (now that the examinations are done with and I have some time for you!). The trouble is that, while there is a noun $\tau\alpha\lambda\acute{o}\nu\eta$ ['first meal', 'any very fine dust' eg. pollen] and a verb $\tau\alpha\lambda\acute{o}\nu\omega$ 'sprinkle', there isn't any convenient noun form $\tau\alpha\lambda\acute{o}\nu\omega$ such as you quote, so that your palynology would mean 'the science of sprinkling'. The -ology you want should be derived from $\tau\alpha\lambda\acute{o}\nu\eta$. But here there are fresh difficulties. It is not usual to use a Nominative Singular ending in $-\acute{\eta}$ as a base, but rather to look for an $-\acute{o}$ form: geology, geography are exceptions, probably because $\gamma\eta$ is a monosyllable [also that when 'lunar geography' wants a name it becomes selenography not selenology, from $\sigma\epsilon\lambda\eta\eta\eta$]. So on these grounds palology ought to be preferred to palaeology. But palology is, I think, impossible. It is not significant enough, I mean immediately suggestive of its origin $\tau\alpha\lambda\acute{o}\nu\eta$; and, in any case, one would tend to associate it with $\tau\alpha\lambda\acute{o}\varsigma$, taking it to mean 'the science of drawing lots'. We must therefore return to palaeology:

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this would certainly do, only for an unfortunate chance! Namely, that
 there is already a well established science of palaeology. It would be
 undesirable to have both palaeology + palaeology, sounding the same!
 Furthermore, if you wanted to name that subsection of your subject in which
 you are so eminent, viz. the study of the old pollen in bags (am I right?),
 you would be confronted with palaeopalaeology (!), or the analogy of
palaeontology.

I can therefore only look round for some other alternatives.
 Here are some suggestions for your choice:

(i) Palaeology. Consistent, but open to the objections outlined above.

(ii) Pollenology. Cuts the knot, but is a flagrant hybrid. Still
 there are sciences like mineralogy or mineralology. I don't approve
 of this, and I don't think you will either.

(iii) Alveology. This is from another Greek word, άλυον, for a
 fine alveate flour. άλυον seems to be used to describe a finer
 flour than ἀλεστος 'baker's-crate', with which it is contrasted for its fineness.
 But I don't find άλυον used metaphorically of other dusts, in the way
 that σταβη is used. Probably a stronger objection would be that there
 are (I understand) derivatives ahead for this word in botany. Don't
 there a thing called alveolus? And I remember you Nip-Tankin's
 identifying a strange fungus which he called very savage as Alveola
varia! These (false) associations will probably rule out alveology.

198x231mm (300 x 300 DPI)

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L. J. D. RICHARDSON, M.A., UNIVERSITY COLLEGE, CARDIFF.

(iv) Achnology. This is from $\alpha\chi\nu\gamma$, 'chaff'. Radically the word seems to mean any light substance that comes off the surface of a solid. Used mostly of chaff that flies off in winnowing, but also of foam, froth, dew, smoke, bloom on down on plums, brass filings, etc.

(v) Lachnology. From $\lambda\alpha\chi\nu\gamma$ 'woolly hair', 'down'. Used like $\alpha\chi\nu\gamma$, but this word suggests hairs too much, I think, for your purpose. It is used metaphorically of 'the hair of trees' i.e. fluff, like $\kappa\omicron\pi\gamma$. Lachnology is not so good, in my opinion, as achnology.

(vi) Leptology — the science of fine particles, *ῥῆμα ἡ ἀριστερία*, from $\lambda\epsilon\pi\tau\omicron\varsigma$ 'fine'. Lepto- is used in a number of scientific terms already.

Name of this ^{gen} is very satisfactory! So I heard something else. There is a classical reduplicated form of $\tau\alpha\tau\alpha\gamma$ found, namely τῆστιον (also in the form $\tau\alpha\tau\alpha\tau\alpha\gamma$, once in Aristophanes but otherwise only in the ancient lexicons of Suidas, Hesychius & Photius). τῆστιον has a number of authentic occurrences, as 'first floor', as well as rather more instances of a metaphorical use = 'subtleties'. Would you stand for

198x229mm (300 x 300 DPI)

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palaeopalynology? It sounds rather forbidding (especially if you prefer to be named a palaeopalynologist!): but it does (in a way) suggest τάρα and (central) παιδαγωγία. (Not that so many Greeks will know the word!).

I hope I haven't failed you. Repeat these as preliminary suggestions, open to debate, if you would like to discuss them further. I should like to hear your views; and we might be able to hammer out something satisfactory in the end.

ψ σ: acolpate, monocolpate, dicolpate, tricolpate etc. are more regular than ~~monocolpate~~ acolpate, bicolpate etc. But must you stick to κόλπος? The Latin sulcus is so much better known. Would non-sulcous₂ (or nonsulcate), bisulcate etc. do? κόλπος is not the ordinary word for 'furrow' — which is ὄλκος. It can, of course, mean a furrow-like depression, so that acolpate etc. are quite all right: the only snag is ^{that} that = just not a natural metaphor with σ. κόλπος is 'bosom'. By 'bosom' we think of γrustling swelling outwards (don't we?): the Greeks thought of the curve the other way, the medial hollow (hence your 'furrows'). We talk of sails 'bellying' in the wind, the Greeks said sails

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L. J. D. RICHARDSON, M.A., UNIVERSITY COLLEGE, CARDIFF.

"behaving like a *Koxtros*" : which means, I suppose, that we think
of the curve ^{of the sail} as convex, the parts as crease!

But this is leading you nowhere. By all means
accliptic, monoccliptic, diaccliptic . . . ; or, alternatively,
non-sulcate, unisulcate, bisulcate . . .

I enclose a copy of my note on *Taakow* etc. If any
interest you as being quasi-scientific (pseudo-scientific you will
connect this to). I fear I must demand its return, as it is
the only copy I have.

WEBB) I have just brought - out of loyalty, etc. - my
young friend David Webb's An Irish Flora (Dundalgan Press,
Dundalk). I am not qualified to say anything about it,
except that the glossary of Irish terms for plants looks
interesting.

Yours sincerely,
L. J. D. Richardson

198x231mm (300 x 300 DPI)

Dear Richardson,

Very many thanks for your postcard and for your very kind letter. Evidently I could not possibly have consulted a more enthusiastic philologist than yourself. I am very grateful indeed for all the thought and trouble you have devoted to my problem.

Of course I am very disappointed about palynology: I had hoped it might be acceptable. I had in fact in my ignorance assumed that (quoted from the Lexicon) was a noun form corresponding with a Latin supine and meaning 'that which is sprinkled' or something of the kind. I gather that if I had been right in this respect palynology would have been satisfactory. As it is I suppose the twist of meaning from 'the science of sprinkling' to 'the science of that which is sprinkled' would be too great? As I think I explained in my first letter, I want a word which covers not only pollen in the strict botanical sense meaning the male spores of flowering plants but also other similar material such as the spores of ferns and mosses (these bodies being commonly included in pollen analyses and their dispersal by the wind at least - following the same laws as that of pollen proper).

I must admit that the possible alternatives do not appeal to me so much.

1. Paleology would bear the same relation to palaeology as pedology does to paedology. And is open, as you point out, to a similar objection: there is no need to invent homophones.
2. Pollenology I had of course considered only to condemn it.
3. Aleurology would hardly do, because as you say λευρον has already given rise to the derivative aleurone, meaning the grains of protein found in seeds.
4. Achnology and Lachnology seem (may I say it?) to be a little far fetched, especially the latter.
5. Leptology: λεπτός has been used by botanists very much in the sense of 'thin' rather than 'fine': its botanical derivatives are all long thin structures.

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And now,

6. Paepalology. It is obvious even to an illiterate like myself that this is a brilliant suggestion but I don't really like it, partly I think because of the double alliteration and partly because it lacks (to me at least) that reminiscence of the English word which is the result of the sequence of consonants, is present in palynology.

You see I still have a hankering after my own offspring: is it quite impossible? My new science is to be concerned not only with the material bodies which are strewn but with the processes which bring about and the laws which govern their dispersal (their strewing in fact).

Thank you for the note on colpae and sulcate. The latter is already in existence and I can see no objection to its being applied to the grooves in pollen grains. It is a great pity that the American author (R.P. Woodhouse) ever used *KoX705* especially since it led his Swedish fellow worker (Brdtman) to invent *colpa*, a furrow. Perhaps however one ought out of deference to a predecessor to follow him in using the same root word at the same time correcting the form of its English derivatives, i.e. *acolpae*, *monocolpae* etc.

Once again, thank you very much for your most interesting discussion. If I hadn't been a botanist I should have liked to be a philologist. Thank you too for letting me see your article in the Philological Society's transactions. I wish I were sufficiently learned to understand it.

Yours sincerely,

[Handwritten signature and notes]
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Professor Paul E. Sears,
Oberlin College,
Oberlin,
Ohio,
U.S.A.

7 March 1945

Dear Professor Sears,

Thank you for your reference to the word palynology in Pollen and Spore Circular No. 9 (received to-day). May I say that Dr. Williams and I did not intend this word to have so wide an application as you have given it. We defined it as 'the study of pollen and other plant spores and their dispersal and applications thereof' and intended it to cover the same ground as does the expression 'pollen analysis' as used by Erdtman.

We cannot however object on logical grounds to the inclusion of fungus and bacterial spores: they obviously fall within the definition (unless, as some writers have suggested, both fungi and bacteria should be excluded from the plant kingdom). But we would certainly not wish to take in e.g.

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virus particles or dead organic dusts.

Yours sincerely,

Keeper of the Department of Botany.

P.S. I am sending under separate cover a recent offprint from The Museums Journal.

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Dr. H. Godwin, F.R.S.,
Botany School,
Cambridge.

5 September 1945

My dear Godwin,

Thank you for your letter of 19 August asking me to review Wodehouse's book for the M. P. I appreciate the compliment, coming as it does from yourself, very much, and will let you have the typescript as soon as I can.

D.A. and I are much concerned about publication of the results of our 1943 eight station census. The day-to-day analyses have all been tabulated, together with the weather records (see form enclosed) and by the end of this month we shall, I hope, have most of the botanical data from the various areas. But what journal or other medium could accept publication of such a mass of stuff? Proc. R.S. (D)? If not, book form seems to be indicated but of course we would much rather defer that for some years.

We should have a Study on daily periodicity in the incidence of plantain pollen ready by December.

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11 Our photographer is beginning to recover and may be back before long.
12 I know he is anxious to go on with the atlas.
13 Erdtman has adopted palynology.

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15 Yours,

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UNIVERSITY OF CAMBRIDGE

Telephone:
CAMBRIDGE 5113BOTANY SCHOOL
CAMBRIDGE

My dear Hyde.

Oct. 3/45.

So glad to learn you will review Wodehouse's book. I was interested to see your pollen-census form; as you suggest, its publication presents very grave difficulties, and I think any editor would want to know exactly what is the case for publication of the material in toto. It seems to me that you & Williams are the only folk really likely to make use of the data in this form. You will extract from them all the generalisations you can. Any paper published might add that photographic copies of the primary data can be supplied (and/or are kept also at X, Y & Z - naming the libraries or institutes chosen).

It will of course represent a colossal effort, - it is a matter of assessing its value in this extensive form. No publisher will take it without subsidy clearly & then only as appendix to a book, in the way geneticists do. The book certainly ought to wait in any event.

I'm sorry if this advice seems a bit bleak. What about a specific grant from a medical source to

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 BOTANICAL SCHOOL
 allow an ad hoc publication of the tables?

It is excellent news that you have this new paper in preparation. Plantago pollen is of especial interest to me now because it seems such a good indicator of forest clearance. Do you ever get Artemisia which also figures in this way, or Ligustrum, which I see Woodhouse quotes as a hay-fever plant?

I am so pleased the prospects for the pollen atlas are improving. I find the need for it 'most every day'. Just now a late-glacial from the Lea Valley is improving me & it has a lot of unknown pollen in it.

Incidentally I should be most obliged if you would tell me the details of your method of making up pollen type preparations from living or herbarium material. I don't feel that I know all the tricks I might about it.

Yes, I see Erdtman has adopted Palynology it is quite a good word, but I'm not sure of the need for it. My guess is that it will stick however.

Kindest regards

Yours
 Harry Godwin

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To the Editors of Nature,
 Messrs. Macmillan & Co. Ltd.,
 St. Martin's Street,
 London W.C.2.

26 January 1945.

Dear Sirs,

We enclose a note which we think may be of interest to you. It includes an extract from an American research bulletin (Pollen Analysis Circular, Edited by P.D. Sears, Oberlin College, Oberlin, Ohio, no reference to which, we believe, has yet appeared in your columns) in the hope that you may feel justified in giving wider publicity to the suggestion which it contains.

Yours faithfully,
A. National Museum of Wales.
D. Llandough Hospital, Cardiff.

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