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and Physical Sciences

Dirk van Dalen

The Selected Correspondence of L.E.J. Brouwer



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of L.E.J. Brouwer

 Springer

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Preface

The editing of the Brouwer correspondence has been a long journey with pleasant surprises and grave setbacks. It was, so to speak, the natural sequel to the publication of Brouwer's biography. When I embarked on the project, I did not foresee the problems and the adversities that lurked at the wayside—in spite of the warnings of our sorely missed colleague Karl Schumann. My retirement was largely filled by taking part in and supervising the project; although my role in the project can be viewed as a free donation to science and our national heritage, I was fortunate enough to obtain financial support for a number of collaborators.

I have found goodwill and support from many sides, for which I am grateful indeed. Let me thank here the many institutions and persons that have enabled me to reach this journey's end.

Special thanks go to my wife Dokie, who, against her better judgement, bravely tolerated this seemingly interminable project.

Finally, the publisher Springer has kindly and efficiently supported me in the task of converting the texts into a book; in particular I am indebted to the help and encouragement of Karen Borthwick, Lauren Stoney and Donatas Akmanavičius.

Utrecht
July 2011

Dirk van Dalen

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Chapter 1

Introduction

The Brouwer archive consists largely of material from Brouwer's estate, which was presented by his heir, Mrs. Cor Jongejan, to the *Wiskundig Genootschap*, the professional organization of Dutch mathematicians. H. Freudenthal and A. Heyting made use of the collection for the edition of the Collected Works, vol. 1 and 2. In 1976 it was passed on by the former chairman of the *Wiskundig Genootschap* to the present editor in order to set up an archive. The archive contained correspondence, scientific documents, and legal and business documents. In due time more original documents were made available by various correspondents. At first, efforts were concentrated on the collection and preservation of original material for the composition of Brouwer's biography. To this end, copies of letters were also obtained from a number of sources; mostly archives but also from individuals.

The present collection of originals and copies is by no means complete. There is no certainty that the collection that was donated to the *Wiskundig Genootschap* has indeed been preserved in its totality; moreover, during Brouwer's life, fire has destroyed an unknown number of documents in his files. Some of the documents in the archive are indeed partly singed.

The letters fall roughly into three categories: scientific, personal, and business. As is to be expected, these categories overlap here and there. The business part contains mostly material that deals with the pharmacy, real estate and legal topics. Only a few of these letters have been put into our collection. A brief explanation may be in order: Brouwer's wife ran a pharmacy in Amsterdam that was actually bought by Brouwer in 1905 from his mother-in-law. Brouwer handled all matters concerning the property, including negotiations with the city and appointments of staff. Furthermore,

Brouwer owned property in Amsterdam, Blaricum, and Laren, and also in Berlin, Harzburg, and in former East Prussia, now in Poland. All of this led to a massive correspondence, some of which has been preserved. Finally, Brouwer was in the 1930s involved in an investment conflict (the Sodalitas affair, concerning a Spa in Budapest); the resulting correspondence would have been enough to keep a couple of clerks in business. Brouwer reported that his Sodalitas file in the end contained at least 70 kg of letters, court orders, documents, memoranda, etc., of which only a small part has been preserved.

Background information on the content of the letters is, as a rule, to be found in the biographies of Brouwer, D. van Dalen. *Mystic, Geometer and Intuitionist: The Life of L.E.J. Brouwer. Vol. 1. The Dawning Revolution, Volume 2: Hope and Disillusion* Oxford University Press 1999, 2005. In Dutch¹: D. van Dalen. *L.E.J. Brouwer. Een biografie. Het heldere licht van de wiskunde*. Bert Bakker. Amsterdam, 2001.

Selection criteria

The letters vary considerably in topic and in significance; numerous letters were selected for the translations that shed light on Brouwer's life, thoughts and mathematics. It would have been easy to double the amount of letters; however, the size of the book and range of topics forced us to refine our selection.

The early years of Brouwer were to a large extent influenced and shaped by his friend, Carel Adama van Scheltema, and his teacher Diederik Korteweg. Scheltema took the 16 year old freshman in hand, and acted as his guide and tutor in the exciting world of fraternities, literature and politics, and Korteweg taught him all the wisdom and techniques of late nineteenth century mathematics. No collection would be complete without a generous display of the exchange between the two friends² and between student and teacher³. In particular, the correspondence dealing with the dissertation is a illuminating supplement to the dissertation itself.

The second period of Brouwer's mathematical journey brings us to the extraordinarily rich topological period. The correspondence of these years (1909–1913) involves the great men of the period, such as Baire, Fricke, Hadamard, Hilbert, Klein, Koebe, Lebesgue, Poincaré, and Schoenflies.

1. A separate biography, not a translation.

2. *Droeve snaar, vriend van mij*, [Van Dalen 1984].

3. *Brouwer en de Grondslagen van de Wiskunde* [Van Dalen 2001].

When Brouwer entered into his mature intuitionism, there was a certain distancing from topology. However, in 1924 he was brought back into the center of the subject when the two young Russians Alexandrov and Urysohn took the stage, almost immediately followed by Karl Menger. A great deal of the correspondence of that period concerns dimension theory. In a later stage also Hans Hahn took part in the correspondence.

After 1930, the number of big topics dwindled. There are in effect two topics that played a prominent role later in Brouwer's life; the first one is the treatment he received from the authorities after the war, and the second one is the loss of his journal, *Compositio Mathematica*. In both cases he was treated less than fairly.

A large amount of correspondence has not been included in the present collection, nor in the online collection. The letters that deal with the pharmacy, the internal revenue service, the Sodalitas investments, real estate, general business matters, and legal matters have not been adopted. Furthermore, the correspondence with Henri Borel (the Sinologist), E. Dubois (neither had Brouwer's letters available), and L.S. Ornstein (permission withheld) are not in the collection. We have also chosen not to include a number of letters and cards with little or no relevance.

The original letters can be found on 'Springer Extras' and can be accessed and downloaded. To view the content on Springer Extras, please visit extras.springer.com and search for the book by its isbn. You will then be asked to enter a password, which is given on the copyright page of this printed book.

Editorial conventions

The letters are preceded by a header that contains the name of the recipient or the sender, the date, and the place of dispatch. When relevant, the letter head is included. The address of the sender is included when known from the document or envelope. In the case of Brouwer's letters the address, when in Blaricum or Laren, is suppressed, being invariably Torenlaan 70.

We have now and then provided the original salutations of the letters; these often convey more information than the translations.

The bottom line contains the standard information about the document: *handwritten, autograph, typescript, signed/unsigned, copy, carbon copy, printed document, partially burned*, etc. Some of the documents have already been published in the Collected Works; in those cases the location is indicated.

There are two kinds of footnotes: those of the author¹ and those of the editor⁽¹⁾.

Footnotes may also refer to letters that have not been adopted in the present volume. The reader can consult these in the online publication of the original versions.

As a rule we have stuck to the original format of the letters. Sometimes we have adopted a variation, indicated, when relevant, in a footnote.

Figures have almost always been redrafted; I am indebted to John Kuiper for his invaluable assistance in providing figures.

The correspondents are listed in a separate index.

References have been provided for most papers or books mentioned in the correspondence.

There is an online bibliography of Brouwer's publications; see *A bibliography of L.E.J. Brouwer*, <http://igitur-archive.library.uu.nl>, in which extra information, such as 'submitted by', 'published in', 'translated in', 'reviewed by', ... is indicated.

Major topics

One may distinguish in Brouwer's life a number of affairs or topics that belong to a particular period, and that have to be kept in mind to obtain a correct interpretation of certain letters in certain periods. All of these have been treated in the biography. Here we will restrict ourselves to a brief résumé of the main themes. The references are to the above mentioned biography.

Friendship with Adama van Scheltema, 1898–1924. Carel Adama van Scheltema (1877–1924) and Brouwer were members of the same fraternity. They became close friends; Scheltema was the older protector and instructor of Brouwer. Their friendship was a very private one, it has found its expression in a long exchange of letters. Scheltema became the leading Dutch socialist poet of his time. He was responsible for the transformation of Brouwer from a shy freshman into a ripe man of the world. [Bio 1.4]

The doctorate. From 1905 through 1907 Brouwer carried on an intensive correspondence with his Ph.D. adviser, D.J. Korteweg. This series of letters provides a great deal of extra insight into Brouwer's views

¹author's footnote

⁽¹⁾editor's footnote

on mathematics and on life. After Brouwer was appointed, Korteweg acted as his older and wiser guardian. [Bio Ch. 3, 6.6]

Lebesgue, topology and dimension. After Brouwer published his proof of the invariance of dimension, a protracted correspondence between Brouwer, Blumenthal, Hilbert,⁴ Baire, Fréchet, and Lebesgue followed. Although Lebesgue did not claim priority on the grounds of his (defective) proof, he did not contribute toward a balanced historical evaluation. [Bio 5.1]

Koebe and automorphic functions. When Brouwer applied his invariance of domain theorem to the theory of automorphic functions and uniformization by salvaging Klein's Continuity Method (1912), Koebe did whatever he could to avoid acknowledging Brouwer's contribution. The episode counted a number of curious situations, which offended Brouwer's feeling for justice. [Bio 5.3]

Interbellum political frictions in science—the boycott of Germany. In 1918 a new international scientific union was founded, which had as one of its aims to exclude the former members of the axis from international scientific contacts. Brouwer took a staunch internationalist position and condemned the idea and practice of the Conseil International des Recherches. He carried his opposition to the Dutch Academy, the Dutch Mathematical Society, and finally to the Ministry of Education. In 1925 he successfully defended the German position in the board of the *Mathematische Annalen* at the occasion of the Riemann volume. In 1928 he acted again in the hope to secure a truly international mathematical congress in Bologna. Sticking to his overly strict position he overplayed his hand, but for all practical purposes the German boycott was terminated. [Bio 9.1 – 9.3]

Dimension theory. The discussion concerning dimension theory proper started in 1923, when Urysohn entered the subject. In 1924 Menger joined in. From then on there is a great deal of correspondence on the topic, slowly developing into the Brouwer–Menger conflict. The mathematicians involved are, among others, Alexandrov, Urysohn, Menger, Vietoris, Hahn, Sierpiński.

The Riemann volume. The *Mathematische Annalen* prepared a volume at the occasion of the centenary of the birth of Riemann (1826). Within the editorial board no unanimity could be reached on the issue of admitting French authors. [Bio – 13.3]

4. We point out that the Brouwer archive contains no letters from Hilbert.

The Grundlagenstreit. Although this was a major topic of discussion in the 1920s, there is hardly any correspondence in the Brouwer archive that deals with it.

The Bologna Conference. The opposition to the boycott of German scientists was gradually growing, when in 1928 the International Congress of Mathematicians in Bologna was being organized. Brouwer untiringly campaigned for a completely open admission policy. He succeeded in reaching a positive arrangement with the Italian organizers, but in the end was not convinced that a guarantee for future open international scientific relations was ensured. He advised against participation. [Bio – 15.2]

The War of the Frogs and the Mice (or ‘the Mathematische Annalen conflict’). A combination of serious illness and an accumulation of conflicts brought Hilbert to an unfortunate act; he dismissed Brouwer from the board of the *Mathematische Annalen*, considering him a danger to the future of the journal. A great deal of correspondence was generated by this decision. In the end Brouwer’s discharge was disguised as a wholesale revision of the board. [Bio – 15.3]

Compositio Mathematica. Soon after his discharge from the board of the *Mathematische Annalen*, Brouwer started negotiations for the founding of a new mathematics journal. The journal appeared in 1935; the political changes in Germany caused some serious problems. [Bio – 16.6]

Post-war conflicts. This deals mostly with Brouwer’s suspension and faculty policies at the Mathematical Centre. After the war Brouwer for the second time was ousted from his prominent position in the editorial board of a mathematical journal. This time he was the victim of a coup in the board of *Compositio Mathematica* by his Dutch colleagues and the publisher. [Bio – 18.4]

Acknowledgements

It would have been impossible to collect the material in the present volume without the help and advice of a large group of colleagues, and of archives and institutions all over the world. I will, with disregard for the alphabet, or ordering principles in general, mention persons and organizations that have been helpful in any respect. Let me first mention the archives that have provided me with information and with copies of documents. The University Archive in Göttingen has most generously assisted

me in finding the relevant material from its collection. I am most grateful to the archivist Dr. Helmuth Rohlfing. In view of the many connections of Brouwer with his Göttingen friends and colleagues, the project could not have been undertaken without his support.

A rich collection of letters and drafts in the Alexandrov archive has been made available to me by Albert Shiryaev, who has taken care of the original letters from Brouwer's personal archive, which were given to Alexandrov by Brouwer's heir. In addition, he provided me with additional material, which was crucial for the biography of Brouwer.

The *Letterkundig Museum* (Literary Museum) in The Hague at an early stage allowed us to make use of the archive of Carel Adama van Scheltema. Its archivist Sjoerd van Faassen most kindly assisted us in the intricate transcription of the letters exchanged between the two friends since their students days. The collection is most valuable, as it allows us a glimpse at an unguarded exchange of letters during the formative years of both men.

The *Centrum voor Wiskunde en Informatica* supported us by making its information available, and by allowing us to make use of the collections of correspondence of J.G. van der Corput and J.A. Schouten.

The collections of letters of F. van Eeden, D.J. Korteweg, and G. Manoury were put at our disposal by the University Library of the University of Amsterdam. The *Noord-Hollands Archief* at Haarlem has an impressive collection of archives on the sciences. A large part of the correspondence with H.A. Lorentz and P. Zeeman used in the present collection was made available by the Noord-Hollands Archief. The archive also contains the correspondence of E.W. Beth, D. van Dantzig, H. Freudenthal and A. Heyting. H. Visser granted permission for the use of material from the Beth archive. Furthermore, the Noord-Hollands Archief contains the archive of the *Koninklijk Wiskundig Genootschap* (KWG, Royal Dutch Mathematical Society) and the *Koninklijke Nederlandse Akademie van Wetenschappen* (KNAW, Royal Dutch Academy of Sciences). Both archives have been most supportive. The *Archief van de Nederlandse Provincie der Jezüieten* (Archive of the Dutch Jesuits) kindly allowed us to make use of the correspondence with Jac. van Ginneken in their archive. The archive of the University of Amsterdam is under the care of the *Stadsarchief Amsterdam* (Amsterdam City Archive); I am indebted for the permission to use the various documents relevant to Brouwer. The library of St John's College gave us permission to use the letters from the Max Newman collection. I am grateful to the archivist, Jonathan Harrison, who also directed me to the son of Newman, William Newman, who also gave permission for the publication. Vagn Lundsgaard Hansen kindly gave permission to use the letters from the Nielsen papers

in the archive of the Mathematics Department of the University of Copenhagen. The Library of Leiden University granted permission for the adoption of the Bolland letters.

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In addition to the financial support of NWO, the Faculty of Philosophy at Utrecht, and the University of Amsterdam have generously helped out over a prolonged period, both in funding and in providing material support. The helpdesk of the Faculty of Philosophy deserves our gratitude for helping us out on many occasions. Thomas Müller and Nick Boerma have lent a hand in giving the text a well-ordered form. Their expertise in the art of TEX and UNIX has been most valuable. Various funds and associations have been kind enough to fund our enterprise; I am most indebted to the Zeeman Foundation (A. Kox), the Heyting Foundation (D.H. de Jongh, A. Visser), the Korteweg–de Vries Institute (J.J.O.O. Wiegerinck), the Institute for Logic, Language and Computation (F.J.M.M. Veltman), and the Universiteitsvereniging van de Universiteit van Amsterdam. Dr. P. Blok of the latter university has been very supportive and inventive in finding ways and means for keeping the project going under difficult circumstances.

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handling of the letters. Dr. Kuiper was most helpful by taking care of the larger part of the illustrations. Dr. van Ulsen was involved in almost all parts of the project; he was responsible for the layout and unification of notation and comments. After the termination of the grant he was prepared to continue his work on the project on a freelance basis. Without the help and friendship of in particular the last three collaborators, the project would have been an awkward burden.

A special grant was made available by NWO for the translations in the present book. Dr. J.W. Nienhuys undertook the challenge of translating Brouwer's letters, which already in their original form presented formidable problems of transcription and composition. I am in his debt, not only for the translations, but also for comments and suggestions concerning the original letters. In the further process his translations have been scrutinized, revised, and polished by myself, and by Prof. M. Knus and Prof. Th. Verbeek where the original texts were in French. In the final stage the Springer corrector, Peter Laurence, has carried out a thorough check.

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Hans Freudenthal has supported the Brouwer project in the widest sense. He had generously shared his considerable store of memories of "the old days", when he joined Brouwer in Amsterdam, and in the subsequent years. Furthermore, he made available his private correspondence archive, thus adding important information that greatly contributed to the coherence and depth of the correspondence collection.

The collection of the material had already started before the project was even conceived. The biography could not have been written without all the evidence and information buried in letters. During the whole prolonged search for letters and documents, I have received invaluable help and encouragement from many colleagues, friends, relatives of correspondents, archivists, etc. I express my gratitude toward all who have during the past years helped me to find the right sources, and warned for the dangers that the editor of correspondence faces. My attempt to provide a complete list of all those who over the past years have been kind enough to assist me in

my self-chosen task will almost certainly fail, nonetheless let me mention my close and distant supporters:

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The archive sources

Most of the letters are to be found in the Brouwer archive, which is at the moment still at the Philosophy Department of Utrecht University. The following list shows the archives where a number of original documents are stored. What is listed as the Mathematische Annalen archive consists of a set of copies of letters exchanged during the so-called Mathematische Annalen conflict (or “The war of the frogs and the mice”). The originals were in the possession of Courant, who made copies of the set and sent them to Van der Waerden for a possible historical account. Van de Waerden then sent various copies out to historians of mathematics, including Freudenthal. The latter copy has been used for the present collection; it has been deposited in the Brouwer archive.

The following abbreviations of archive names have been used at the end of the letters:

Adama van Scheltema Nederlands Letterkundig Museum, Den Haag

Alexandrov Moscow (in charge of A. Shiryaev)

Baire Archive of the Académie des Sciences, Paris.

Bernays Eidgenössische Technische Hochschule, Zürich

Beth Noord-Hollands Archief, Haarlem

Bieberbach Deutsches Museum, Bibliotheksbau. Munich

Brouwer Philosophy Department, Utrecht University

Corput (van der) Centrum voor Wiskunde en Informatica, Amsterdam (Noord-Hollands Archief, Haarlem)

Courant Elmer Holmes Bobst Library

Dantzig (van) Noord-Hollands Archief, Haarlem

Doetsch Universität Freiburg

Ehrenfest Museum Boerhaave, Leiden

Einstein Hebrew University, Jerusalem

Fréchet Archives Académie des Sciences, Paris

Fraenkel Hebrew University, Jerusalem

Freudenthal Noord-Hollands Archief, Haarlem

Fricke Universitätsarchiv der Technischen Universität Braunschweig

GAA Stadsarchief Amsterdam

Heyting Noord-Hollands Archief, Haarlem

- Hilbert** Universitätsbibliothek, Göttingen
- Hopf** Eidgenössische Technische Hochschule, Zürich
- Klein** Universitätsbibliothek, Göttingen
- KNAW** Koninklijke Nederlandse Akademie van Wetenschappen, Noord-Hollands Archief, Haarlem
- Kneser** (Göttingen) Universitätsbibliothek, Göttingen
- Kneser** (Zürich) Eidgenössische Technische Hochschule, Zürich
- Korteweg** Universiteitsbibliotheek, Universiteit Amsterdam
- KWG** Koninklijk Wiskundig Genootschap, Noord-Hollands Archief, Haarlem
- Lakwijk (van)** private collection
- MA** Mathematische Annalen collection; various sets of copies (e.g. Brouwer archive)
- Mannoury** Universiteitsbibliotheek, Universiteit van Amsterdam
- Menger** Special Collections Department, William R. Perkins Library, Duke University / Mason Barnett
- Ministerie van Onderwijs** Zoetermeer (Den Haag)
- Mises (von)** Harvard University
- Mittag-Leffler** Djursholm (Stockholm), Swedish Academy
- Ritter** Utrecht University Library, Ritter Archives
- Schoenflies** Universitätsbibliothek, Göttingen
- Schouten** Centrum voor Wiskunde en Informatica, Amsterdam
- Sommerfeld** Deutsches Museum, Bibliotheksbau. Munich
- Univ. Arch. Oslo** University Archive, Oslo
- Veblen** Library of Congress, Washington
- Zeeman** Noord-Hollands Archief, Haarlem

Chapter 2

1900 – 1909

1901-12-15

From C.S. Adama van Scheltema — 15.XII.1901 Amsterdam

Dear Bertus [Beste Bertus]

Your letter ⁽¹⁾ is something of a small event on this first cold winter's day. I had asked Huet ⁽²⁾ whether I was allowed to visit you, ⁽³⁾ but he preferred to postpone that until you would ask for it by yourself,— and now your letter, which doesn't really ask for it, arrived, but which does show that you are recovering,— and also: *a new will to live*. Only with that too you will in fact be able to return to life, that just happens to push down the most brilliant man, when he primarily doesn't know how to live *intellectually* in a conscious direction. And when you really and consciously start all over again using your renewed vitality, a treasure will be open for your desires, and you will experience again the gratitude to live in just *this* wild and wonderful time,— but also a will to take part in it!

Sometimes I yearn for the quiet and endlessness of the country side, but I will have yet to remain for some time in the oppressing narrowness of city life, to breathe for a moment in the sad sphere of the time, to submerge for just a moment as 'die Wildente' ⁽⁴⁾ and after that to fly better and safer,— and foremost also to search for the simplest connection between the real and the ideal.— This summer I did in fact make something beautiful,— I hope

⁽¹⁾ *Brouwer to Scheltema, 5.XII.1901.* ⁽²⁾ Brouwer's family doctor ⁽³⁾ Brouwer invariably suffered from nervous breakdowns, complete with physical side effects, as a result of his military service. The effects often lasted for some time. In fact it seriously delayed his study. ⁽⁴⁾ Refers to Ibsen's play *The Wild Duck*

to publish in April a new collection, ⁽⁵⁾ but fame won't yet be captured thus, I guess. Here I am sterile,— it is hard for me to reserve a couple of hours each day to lift my head above 'die Sumpfluft' ⁽⁶⁾ and . . . there are no great minds around,—

returning to you I hope to find a smaller soul:— it's sometimes also a kind of art and sometimes it is courageous indeed to be a bit smaller,— for us men,— women are like that by nature;— more marrow is required to bear greatness.

Write to me then when you have recovered so far that you can see me, I long for that — the day is rather cold and so is my room, and hence maybe my letter, but all the warmer is my desire for your return, for your appearance, for your words,— if it is really to be a *revival* (— and you must want that) it can also be the *birth* of a new and closer relation:— I sometimes feel myself dying from the small desires of life,— the great ones I keep — because it is beautiful to *be* human,— I hope that you will have *become* so.

The addresses are:

Heelsum (Hupkes) f. 2,50 per day.

Ruurloo (H. v.d. Mey (baker)) f. 1,75

Doorn (Miss H.W. Boeschoten) f. 3,=

Bergen (near Alkmaar, this is very beautiful, the name I don't have near at hand, but if you want to go there I can easily send it, f. 3.=)

For the rest Huet will know others.— Send me then your new address.—

Your friend Carel

[Signed autograph – in Scheltema]

1903-05-23

To C.S. Adama van Scheltema — 23.V.1903

Amsterdam

'Il faut savoir se séparer' ⁽⁷⁾ (La Rochefoucauld).

'C'est le privilege des grands esprits, de ne pouvoir se brouiller' ⁽⁸⁾ (Voltaire).

Carel, my rich poet, I have finished your book, but now listen: In no realm there are two Kings, each must live in his own country of commoners;

⁽⁵⁾of poetry. ⁽⁶⁾the swamp air. ⁽⁷⁾One must know to separate ⁽⁸⁾It is the privilege of the great minds that they cannot quarrel

that solitude without peers, that is what they are Kings for. But once a year they visit each other, and behold their great contrasts, with nothing in common except their joint feeling of both being king, both standing in the direct grace of God; their intercourse cannot consist of anything but showing each other the powers and splendors of each other's realms.— And the only during charm that they can receive themselves from the knowledge of both being King, consists in showing each other prescribed courtesies and in the reporting of the outward *appearances* of their person and kingdom.

Carel, your realm is more summery than mine, and your people more pacified — both our countries are endowed by God with wondrous beauties.

Well, after our talk of Thursday evening I believe that you are right, but also that the best interpretation of the fact that we have to live apart is what I write here.

Let us get together every year on Ascension Day, and together solemnly bathe ourselves in the cool spring sunshine, and sup together and exchange what the past year has brought, and, by the way indiscernible for each other, feel ourselves joined by 'knowing each other to be King'.

So, brother, dost thou assent to this?

Then, hail to Thee and Thine Kingdom.— Until 1904.

Bertus

To be deposited for posteriority in the 'Archive of the Holy Twin Alliance', established Ascension Day 1903.

[Signed autograph – in Scheltema]

1903-08-09

To C.S. Adama van Scheltema — 9.VIII.1903

Haarlem

Brother and King, [Broeder en Koning]

Be of good courage, be of good courage! - for your task, which is busy unwinding. It's a pity that also a King has a body, just as his subjects, a vestige indeed from an earlier stage of development, but he does have one

and he has to guide it decently to the grave. That doesn't make the royal task any lighter; the subjects must not know worries of his body.

And this bodily concern weighs much heavier on us, yes is almost impossible. That body with its life of passion in a muddled brain needs the warmth of the soul, and man's soul warmth flows down; who gives some of it to the King?

That is the misery of purification, the warning misery which restrains the great soul that is rich at the bosom of its mother, the fair earth, and together with mankind, the laboring mankind, the freedom, seeking mankind, the naive tower building mankind at his feet — from too high a flight, and in the fear of God, of God whom he has to serve in the guarding of his children, asking nothing for himself — we are the elected — not in the world for our pleasure — we are the prophets, who, messengers between God and mankind, lead its development, its work, its growth and its blossoming and we inspire it with the dewdrops flowing from our fingers — you stride solemnly and stately through your garden, and you disperse them with a steady and knowledgeable gesture: I fly through my jungle, and they roll without me knowing — few though who find them, but for them all the more valuable.

But we may only turn a look of sadness to our mother, to nature, or to each other — not to the people — because if our tears fell there, they would burn themselves and they wouldn't understand. But if we direct our eyes upward, our tear will not fall, and it will eat into our face and leave the scars of asceticism.

That is our sad inner discord; that is the tragedy of the lonely resignation that we have known: it is heart-rending when among the hard workers beneath us there is one happening to look upward who then discerns his King sometimes even, clairvoyantly, sees his royal sadness, and wants to comfort him, but the King shakes his head: no comfort can reach him.

Brother, write, write every now and then, warmth doesn't flow horizontally either, but, to be seen, stimulates our vigor, even though it doesn't make our task more joyful.

Last week I talked a bit with your brother: ⁽⁹⁾ he is not at all like a poet, and he doesn't understand your divine side at all — but as a socialist he's one of the brightest that I have met, even if he has not made everything

⁽⁹⁾Frits Adama van Scheltema.

explicit to himself, he isn't trapped anywhere. I quite liked him. Addio,
happiness and strength.
your friend

Bertus

[Signed autograph – in Scheltema]

1903-11-15a

To C.S. Adama van Scheltema — 15.XI.1903^a

Amsterdam
Nieuwe Tolstraat 39

Dear Carel, [Beste Carel,]

Of course you haven't minded that I have been silent for so long. I was busy: to return after two years of absence to my subject required some dedication, especially where all love for that subject was lacking. But now I have succeeded bit by bit and I am rowing in steady strokes to my 'doctoraal'.⁽¹⁰⁾ My work proceeds without illusions, but with a feeling of cheerfulness about the activity as such. And that is growing big, broad and comprehensive. Always working on, reading and thinking — and harmonizing one's life ever more, borne by resignation and trust in God — that's bliss down here. My house is homely⁽¹¹⁾, striking and modestly cheering. And sacred to me — I could do no harm there nor have evil thoughts — here I am even friendly to everybody. If a boring person comes to me — in my house I don't find him annoying — and when I am out of doors the next day, I don't comprehend how I could have managed to tolerate him.

That ultimate harmonization of our lives seems to be hardest and slowest and most cumbersome for people of our kind. It seems that in the line of progress of generations the eldest child of each parental couple must not be sent out into the big stream of 'strives and mates', but has to be offered as a opening sacrifice — as a flower that sprouts sideways without partaking in the upward striving of the stem — to the Gods of consciousness, a consciousness that is infertile in the worldly motions — and then the Gods forsake by way of compensation their rights to the other children. Let there-

⁽¹⁰⁾Final examination, comparable to 'masters'. ⁽¹¹⁾Brouwer used the English term 'homely' (i.e. 'cosy') here.

fore those holy sacrificial animals be conscious of their role, and let them not be jealous of the coarse rye bread of the animals of the herd.

Ah, well, my dear companion and comrade in arms, the purest in ourselves, the resignation and dedication to our task, it lives best in our solitude. Associating with people is necessary, but as different from the jewels of our hearts, as rye bread – which is necessary as well, from ambrosia.

With someone else we descend from our holy tower, and we live in lower regions, which also have their own demands, which also want to be part of life. The two of us do not have such lower regions in common; blessed be the moment we have seen that.

But I do not value you less because of that — because you are far away I can see you better in your lonely splendor, of which I got the sensation the first time I saw you — the first moment I saw a person for whom I felt something. And that splendor of yours I have not observed in anyone else, but to perceive it, it's best to stand far away. Therefore, stay afar, know a warm friendship for you in me, and let us work with glad acquiescence on our task in this life, knowing that all sorrow is given by God and part of that task, and see each other

sub specie aeternitatis.

If you can maintain yourself on that level, and thus view the presently living herd animals, — and I believe you can — then you can indeed move on to tragedies. In the end of Dusseldorp ⁽¹²⁾ I saw an announcement of that — I am longing for their birth.

With a handshake from Christian King to Christian King

your Bertus

[Signed autograph – in Scheltema]

1904-01-18

To C.S. Adama van Scheltema — 18.I.1904

Amsterdam

Dear Carel, [Beste Carel,]

Passing your house, I saw the green shelves of your book case being lowered down, and with this I associated the world, — which makes you

⁽¹²⁾[Adama van Scheltema 1903].

look in vain for a quiet corner, where you might serve it without disturbance, wherein your rich soul is allowed to blossom. Say, do write me now and then, how you are, how you feel, and if you can find quietude in the dedication to your duty, leaving it to the Gods to give you the time to complete that duty.

I spent the Christmas holiday on the heath of the Gooi, ⁽¹³⁾ and sat there in wind and frost between the pines, and wept tears about the transience, when I for a moment remembered in a flash how ecstatic I used to be about such things five years ago. That dead life is worth crystal tears, and flowers on its grave.

Would that memory be alive in yet another person, but in my barren man's soul? If so, it would be in yours. Do some day hold a requiem mass for the dead too. What a lack of tenderness, artlessness, of dedication in the words I write; I know it, I would be ashamed of myself if I met myself as I was five years ago; but just as one cannot stop one's beard from growing, neither can one stop the growth of the philistine tissue in the soul. Then let me be great as philistine! And unfeelingly go my way through the dead stones, alone to the splendid End. And so leave my trace on the melancholic earth. That is, Ambition is born in me – perhaps. But in any case one that knows how to restrain itself, and to collect quietly building materials until its time has come! I will have to be obscure for some more years, and then my grasp shall be felt. Exactly because I feel the insignificance of all worldly affairs, no other ambition or fear will disturb my course.

My short lived socialist inclinations, of two years ago, have thus turned out not to be viable. And even yet I believe that in you they don't belong to your proper substance. Read that last volume of Gorter, ⁽¹⁴⁾ then you will also feel nothing but revulsion, I know you too well for that. In you too introversion is the main theme; take care that an overhasty ambition will not lead us, out of yearning for quick success, to assimilation and to consorting with low company.

I heard from a nobody, who had heard you read Dusseldorp, ⁽¹⁵⁾ and found it beautiful, and who apparently thought that there had to be a lot of serious stuff behind it; please don't do such things, or maybe you need that kind of caresses, you would know best; in that case, do.

Wednesday Riechers and Waldemar ⁽¹⁶⁾ play in the Paleis; ⁽¹⁷⁾ maybe they can soften my philistine tendencies; you will of course also go there; I remember Die Wildente as if it were yesterday evening.

⁽¹³⁾At the time a poor farming area, some 25 km southeast of Amsterdam. It had already been discovered by artists. ⁽¹⁴⁾Socialist poet. ⁽¹⁵⁾[Adama van Scheltema 1903]. ⁽¹⁶⁾actors. ⁽¹⁷⁾*Paleis van Volkswilij* (Palace of the People's Industriousness) in Amsterdam, the Dutch version of Chrystal Palace.

Please write to me your new address. I hope you will find there solitary quiet; surround yourself with books of your equals ⁽¹⁸⁾ and people you find sympathetic. I live with Pascal, Emerson, Madame Gimon and Montaigne.

And if you don't know it yet, do me a favor, read 'Journal de Marie Bachkirtoff' (Paris, Charpentier). She resembles us both, she is halfway between us. ⁽¹⁹⁾

Carel, my writing is tough, I am nowadays hardened, but underneath these words I feel my long soft hand of yore.

Your friend Bertus

[Signed autograph – in Scheltema]

1904-07-04

To C.S. Adama van Scheltema — 4.VII.1904

Sunday evening

Dear Carel, [Beste Carel,]

I haven't left yet; the long duration of the vibrations of restlessness, which always precede my departure, may indicate that my absence will be long and far. Anyway, I need it very much, not so much because of my physical health, which doesn't leave much to be desired, but rather for regaining the pure relation in which I have to place myself with respect to the various people and institutions within my narrow social horizon, so as not to be distracted from nurturing my abilities and the development of my clairvoyance in the service of God.— Finding the purities of human relations is rather a comprehensive task — nowadays there is more interaction between the unconscious lives of me and my environment than before. But even if the equilibrium isn't reached, work in that direction is the happy task in our lives.

Coming winter I will be in Blaricum — where a small house is being built for me ⁽²⁰⁾ — working on a philosophical confession, which is going to

⁽¹⁸⁾In text 'Ebenbürtige' ('of equal birth'). ⁽¹⁹⁾Marie Bachkirtoff (Bashkirtseff) was a much admired genius artist-intellectual, who died prematurely ⁽²⁰⁾This is the so-called 'hut', designed by his friend Ru Mauve.

be the prologue of my work, or in London, in the great British Library, for my dissertation: ‘The value of Mathematics’ with the motto

Οὐδεις ἀγεομετρικος εἰσιτω ⁽²¹⁾

I thank you for your well-meant admonishment to me at the gate of the paradise of freedom. If I were looking for kingship on earth, it might be good to wall myself in mathematics, and have myself crowned like a pope in the Vatican, a prisoner on his throne. But I covet a Kingship in better regions, where not the goal but the motive of the heart is of primary importance.

We are not on earth for our pleasure, but with a mission that we have to render account for. And a small kingdom by the Grace of God is better than a large one by the will of the people.

But all this are tough thoughts of the heavy work of steering the ship, which after all floats on the clear lakes, protected by sun and lucky stars. And this heavy steering work is the direct punishment for a lack of confidence to surrender oneself to unknown powers that after all would be the best for us to sail by.

Anyway, such a trust is the essential thing, and whether one directs oneself in good faith or allow oneself to be directed is more a matter of a name, which mainly depends on the nature of your own character, which is after all what you are trustingly relying on.

In this manner we both are looking for what is strongest and permanent in ourselves, hence true, and we want to make ourselves independent of the weak, the changeable, what is false, where we will never find support. However — we must wittingly every now and then let our hair down, because without paying every once in a while a small tribute, we cannot get rid of the devil. Letting our hair down we do with the necessary contempt, because we don't want to become chummy with the devil.

Carel, I hope that you can read under all these words a current which is the eternal content of the letter.

Greetings from your friend,

Bertus

[Signed autograph – in Scheltema]

⁽²¹⁾Let no one who is not a geometer enter.

1905-05-13

From D.J. Korteweg — 13.V.1905

Hilversum

Dear Brouwer [Waarde Brouwer]

You are certainly not mistaken that I take much interest in you, and therefore I appreciate you sending me your booklet.⁽²²⁾ Whether I will read it? I leafed through it, but it is not the kind of reading I wish for, or that is good for me. It is true that right next to us there are those unfathomable abysses, but I don't like walking along their edges. It makes me dizzy and less able for what I have to do. Whether it is good for *you*, I doubt. That much is certain, that I rather like seeing you walk different paths, even if it is difficult to follow you there as well, where you dig so deep into fundamental matters.

With cordial greetings

Your
D.J. Korteweg

[Signed autograph – in Brouwer]

1906-09-07a

To D.J. Korteweg — 7.IX.1906^aBlaricum
Torenlaan

Professor,

For some time I have been in Blaricum now; where I can more easily devote all my time to my work. I have stopped reading others, and I am now busy ordering my notes and arranging them into chapters.

I feel the more strengthened in my convictions, now that I observe that I can fully stand by my notes of roughly two years ago, even now, after all my reading of the intermediate period.

⁽²²⁾[Brouwer 1905A], *Leven, Kunst en Mystiek/Art, life, and Mysticism*.

But now I can support them better with mathematical elaborations than at the time. I already have a publisher, ⁽²³⁾ and to coerce myself, I have agreed with him that he can start printing in the beginning of October. Before that time I'll drop by you, to hear whether you wouldn't rather see the copy before it's printed; then I can still change as much as I want; and once they are page proofs, I am of course much more restricted.

Hoping you have had an agreeable summer, and looking forward to see you again soon.

With polite greetings

L.E.J. Brouwer

[Signed autograph – in Korteweg]

1906-09-07b

To C.S. Adama van Scheltema — 7.IX.1906^b

Blaricum

Dear Carel, [Beste Carel]

For quite some time we haven't heard from each other; Sunday afternoon I was in town, and saw you at half past 4 at the Leidscheplein ⁽²⁴⁾ in the streetcar; I whistled, but in vain; I'm working hard on my dissertation; but for 5 weeks I have been suffering from a terrible root canal-toothache, from which I'm free only the last 14 days; it was almost unbearable; the last sign of you were those German professors eating coconuts on an island; ⁽²⁵⁾ the island is very good, the food is still wrong, and those Germans will probably eat a lot too. Enclosed here I send you two English translations, ⁽²⁶⁾ by the end of September there is again a new thing in the Academy, ⁽²⁷⁾ and by the end of October the dissertation, many 'deeds', isn't it, speaking in your language. Oh, if they knew how little energy I have, and how afraid I am of all those doers of deeds.

Life is a magic garden. With wondrous softly shining flowers, but between the flowers there are the little gnomes, they frighten me so much, they stand on their heads, and the worst is, they call out to me that I should also stand on my head, every once in a while I try, and I die of embarrassment;

⁽²³⁾Maas & van Suchtelen. ⁽²⁴⁾Square in front of the City Playhouse in Amsterdam.

⁽²⁵⁾A newspaper cutting. ⁽²⁶⁾[Brouwer 1906A2], [Brouwer 1906b]. ⁽²⁷⁾[Brouwer 1906c].

but sometimes the gnomes shout that I am doing very well, and that I'm indeed a real gnome myself after all. But on no account I will ever fall for that.

Would you like tomorrow (Saturday) to go swimming with me in the sea? Not in Obelt ⁽²⁸⁾? Then I will arrive about ten o'clock in the morning at your place, and we walk there from Overveen all the way through the dunes. If you don't join me, that's all right too, but by all means you should do it.

Bye, old chap,

Bertus

[Signed autograph – in Scheltema]

1906-10-16

To D.J. Korteweg — 16.X.1906

Blaricum

Professor,

I have subdivided the material for the dissertation, as it is now before me, into 6 chapters.

- 1°) The construction ⁽²⁹⁾ of mathematics.
- 2°) Its genesis in relation to experience.
- 3°) Its philosophical meaning.
- 4°) Its founding on axioms.
- 5°) Its value for society.
- 6°) Its value for the individual.

The survey in the first chapter I sent you serves mainly as a support for the next chapters, and to be able to refer to it, moreover to display various investigations in the foundations of mathematics from one single point of view, namely that of their meaning for the constructing mathematics. ⁽³⁰⁾ A couple of things I have worked out a bit further, for instance the research of Hamel on the straight line as a minimal curve, because I need that in

⁽²⁸⁾Public swimming pool in Amsterdam. ⁽²⁹⁾Brouwer used a more colorful terminology here “opbouw”, i.e. “erection” or “building”. ⁽³⁰⁾Brouwer uses the term “building mathematics”. To translate this with “constructive mathematics” would twist Brouwer's intentions. He indeed referred to a mathematics that constructs its own objects.