From Past to Future: Graßmann's Work in Context

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Life history of Robert Grassmann, written by himself (1890)

(Grassmann, Robert: Footnote to the Foreword of the "Gebäude des Wissens")

To the author it has always been a necessity, on studying a book, to imagine the author of the book alive before him. He therefore obtained a picture of him and strove to learn enough of the course of his life to be able to judge the course of his development. The author assumes a like necessity with many of his readers; he has therefore, in this first volume, included his picture¹ and in the following offers the reader a brief survey of the course of his development.

The author was born on 8 March 1815 and at first raised in the house of his father, Justus Grassmann, Professor of Mathematics and Physics at the Gymnasium in Stettin, then from his 3rd year in the house of his uncle, Privy Government and Schools Inspector and Seminary Director Heinrich Gotthülf Grassmann of Stettin. He obtained his school education from 1825 to 1834 at the Marienstift Gymnasium in Stettin, his academic education from 1834 to 1838 at the Universities of Bonn and Berlin, where he studied natural science (with Treviranus, Dove), philosophy (with Brandis, Fichte), and Protestant theology (with Nitzsch, Bleek, Neander), undertook long journeys through Germany, Switzerland, Italy, and Austria, as well as through Belgium, Holland, and France, and finally at Berlin passed his first theological examination with the certificate "good". After his return to Stettin he was appointed, at first in 1838 for three months as

¹ This announcement seems not to have been realized! Copies of this book in Berlin (Staatsbibliothek and Humboldt University Library), London (British Library), and Strasbourg (Bibliotheque Nationale) do not contain a picture of Robert Grassmann (H.-J. Petsche & J. Liesen).

first instructor at the then School-Teacher Seminar, and then in 1839 for three months to stand in for its Director. At this time he began the study of higher mathematics and physics, mostly from French works, while at the same time serving from 1838 to 1839 as a Pioneer. As such he received the request to produce galvanic-activated mine detonators, which at that time were activated by so-called detonation-sausages (tubes loaded with gunpowder); he succeeded in building an apparatus that ignited three mines simultaneously at up to 600 paces, and this apparatus was soon thereafter introduced into the Prussian army. The author was released from the Service in 1839, after he had passed the examination for Pioneer-Officer with the certificate "good". In the year 1840, before the scientific examination commission at Greifswald, he then achieved the certificate for unrestricted facultas docendi with the authorization to teach in mathematics, physics, philosophy, and theology for Prima, in all other subjects for the middle classes of the Gymnasium.

The author now acted from 1841 to 1852 as Instructor at the higher schools of Stettin, in 1845 became Senior Instructor and in the same year was married to Miss Charlotte Jeanneret from Switzerland, with whom to this day he lives in wedded bliss. From this marriage seven children were born to him, of whom three: a son Gustav and two daughters, Elise and Helene, are still living. In the year 1846 the author established a scientific society in Stettin and delivered scientific lectures in it from 1846 to 1848. The author had at this time undertaken major scientific studies. Already as a Gymnasium student in the upper classes he had devoted 2-3 h daily to his private studies; he still has six quarto volumes of work of mathematical and physical content from that time. Then, in preparation for the examination, he had made independent extracts from numerous works. As an Instructor he continued this activity. For the language classes he studied the works of K.F. Becker, Herling, and Jacob Grimm, and, together with his brother Hermann Grassmann wrote a German grammar and a short Latin grammar. For the physics class he wrote a physics exercise booklet, for the geography class a manual in geography and an atlas. His principal studies however he devoted to the philosophers. He studied Aristotle and Plato among the ancients, and mainly Hegel and Schleiermacher among the moderns. With these studies he soon recognized that philosophy in its present form, despite the many often sparkling intellects in it, was without a scientific basis and without scientific method, and set as his life's problem to create for philosophy a scientific basis valid for all time, similar to that possessed by natural science. He has for 45 years since that time devoted 4–8 h nearly every day to the most strenuous efforts on this problem and submits in the present work the result of those efforts.

But in the year 1848 there entered into the life of the author a great reversal. The great governmental movements and radical changes of the year 1848 aroused the writer and his brother, the later Professor Hermann Grassmann, from their studies.

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They recognized that it was necessary to lead the movement in an orderly, steady way. Both at once stood in their conviction with all their powers. They laid down their program in the Deutsche Wochenschrift, which appeared from the end of March until June 1848. On 1 July 1848 the two of them then established their own printing works together with a publishing house, at the same time publishing a large political newspaper under the title Norddeutsche Zeitung and a trade paper. His brother, the later Professor Hermann Grassmann, withdrew from this business in 1851; however the author continued alone on its account. From 1 July 1848 until the year 1855 he was Editorin-Chief of the Norddeutsche Zeitung and wrote numerous lead articles of political and national-economic content for the paper. The orientation of the newspaper was free conservative with a German national traditional stance. The newspaper advocated with warmth and vigor the unification of the German fatherland under the scepter of the Hohenzollerns, the development of transport and trade and the development of the school system, and supported the government insofar as it agreed with the convictions of the author. It strongly opposed the immoral degeneration and irreligious practices of many circles and pursued the vain and dictatorial decrees of certain party leaders with apt and severe ridicule, while it most willingly published the columns and granted support to every tendency that would serve the country and public weal and would further freedom and civilized behavior.

To the author it was at that time repeatedly given to intervene supportively in political life. When in 1848 the National Assembly turned to a dangerous course and in November 1848 the majority of it, despite its dissolution, continued in session, the author hastened to Berlin in order to gain a reliable judgment of the situation. On 11 November he had in the apartments of the Professors' Group in Berlin a long meeting with several members of the Zentrumspartei and was there convinced that the majority of the National Assembly steered toward a republic, and were also no longer to be dissuaded from this course of action. On the following day he then hastened to former president of the National Assembly Grabow and to the Minister of Interior von Manteuffel, as well as to Potsdam to the Lords of the Court and to Representative Bassermann from Mannheim, who was sent by the German Parliament in Frankfurt a. M. to Berlin, in order to inform himself about this occurrence and to orientate himself to the situation. All these men were agreed that the activities of the National Assembly had to be brought to a halt. Herr von Manteuffel would have imposed the Belgian Constitution. The author pointed out how much more correct it would be to publish the Constitution agreed to by the National Assembly provisionally as the fundamental law of the State and then to improve it further; Herr von Manteuffel recognized this and proceeded accordingly. Meanwhile, in the absence of the author, the officials of Stettin, under the terrorism of the so-called Progress Party, declared against the Ministry and for the National Assembly; a deputation was sent to Berlin to express the assent of the

Stettiners to the National Assembly, and met the author on his return trip from Berlin to Stettin. The problem of the author was now to lead the Stettiners back to the correct path again; the author and his friends succeeded in solving this problem. The City Council of Stettin on 16 November withdrew the resolution earlier agreed upon and on the basis of the report of its Commission declared itself for the government and against the National Assembly. A detailed presentation of this resolution was even sent the same evening from the author to all magistrates of Prussian cities and presented to the Frankfurt Parliament. Numerous letters of thanks were the response. The danger was eliminated.

In the year 1849 the author was called to Berlin in order to undertake the editing of the German Reform. In a short time he succeeded in doubling the number of subscriptions to the paper; but in consequence of differences with the publisher, which would have decisively interfered with the editing, the author returned to Stettin after a few months.

Now in Stettin, in 1850 the author received an order from the Protestant Consistory for Pomerania to undertake a critical edition of the text of the Bollhagen and Stargard hymnals. The Hymnological Section of the Royal Library in Berlin was placed at his disposal for this purpose; the author succeeded in restoring the original texts of almost the entirety of the hymns of the hymnals mentioned. In the year 1852 the author established for this his own type foundry and had the two hymnals set in the form of stereotype plates and issued them to bookshops. In the year 1853 he then built his own printing plant, but a steam boiler that was installed in the plant, and served for the operation of a Fournier cutting machine, exploded in August 1854, while the author was living in the country, destroying the greater part of his print works and forcing the author to sell the *Norddeutsche Zeitung* and resign the editorship.

The author now found time again to turn his attention exclusively to his literary studies. In 1855 he worked, together with his brother, the later Professor Hermann Grassmann, on the theory of number and extension theory, and in 1856 logic and combination theory as well. Then in 1856 the author alone published the Biblical History for country schools, for city schools and for higher schools, as well as the Life of Jesus and the Chronology in the Life of Jesus, and worked on individual branches of his great work, at least in their first outlines. Also in the following years 1857–1865 he occupied himself almost exclusively with these works, but found besides the inspiration to prepare three drafts for a new appendix to the Bollhagen and Stargard Hymnals in the years 1857, 1858, and 1859. The new hymns in the new edition of the Stargard hymnal and likewise those in the new edition of the Bollhagen hymnal are taken from these drafts in Hessenland.

In the year 1861 the author founded a Hebrew print works, which in 4 1/2 years produced from stereotype plates a great number of Hebraic-Talmudic works (Talmud,

eight volumes, Mishnah in two editions of six volumes, Shulkhan Arukh in two editions of five volumes, Siddur four editions, Chumash in two editions of four volumes) and sent many thousand copies to Poland; the author established his own warehouse in Warsaw, which managed these sales.

In the year 1862 the author let the first book of his great work appear on a trial basis in bookshops under the title *Atomenlehre*.

In the year 1865 he again founded a large newspaper, the *Stettiner Zeitung*, which was followed in 1867 by a second paper, the *Pommersche Zeitung*, both under the editorship of the author. Unfortunately soon thereafter the business in Warsaw took a very unfortunate turn. The ruble sank permanently to 2/3 its value; all wares stored in Warsaw were lost, so that the author lost what was then his entire fortune and in 1869 was forced to declare bankruptcy in Stettin.

With the support of his friends, however, he quickly succeeded in overcoming this misfortune; already on 18 January 1871 he could present to the Court proof that all the creditors were fully satisfied by him for all their demands in the bankruptcy as to capital, interest, and costs. In the same year the son of the author, Dr. Gustav Grassmann, entered the business and relieved the author from a non-trivial part of his business work; but the business from that time achieved a significant upswing. At present the business of the author publishes three large daily newspapers in the format of the *Kölnischen Zeitung*, with 48,000 subscriptions, prints the Bibles of the Main Prussian Bible Society and numerous other works, operates 12 high-speed presses and a rotary press continually, and his own type foundry and galvano-plastic institution with electric machines, as well as a large book bindery and mint with numerous machines that are combined in the business. All these works are driven by two steam engines and employ well over 100 men. The author has now again devoted the greater part of his energies to his {literary} works, while at the same time he is active as City Marshal and leader of the Citizens Party for the welfare of his native city.

In the year 1872 the author again published the *Atomistik* in a completely revised form. In the same year then followed the first edition of the *Formenlehre oder Mathematik*, proceeding purely in formulas. Logic is here for the first time derived strictly scientifically in formulas and has found approval with the mathematicians of Europe and America. In the year 1873 followed the *Erdgeschichte oder Geologie* and from 1875 to 1876 the *Wissenschaftslehre* in four books. The latter was to present an introduction to the *Gebäude des Wissens*; it introduces philosophy in the first book, natural science in the second, political science in the third, and the science of God in the fourth, and each book presents a synopsis of those individual sciences. The Work appeared in 1882 under the title *Einleitung in das Gebäude des Wissens* in a new edition.

The author recognizes that the published Works are not yet satisfactory in form; rather, they present the subjects as if they were proven. The author now seeks to remedy

these shortcomings in his *Gebäude des Wissens*; he added rigorously scientific proofs for the more important theorems. In this form the first eight volumes of his *Gebäude des Wissens* have appeared from 1881 to 1890 [...].

(Grassmann, Robert: Vorwort zum Gebäude des Wissens. In: Das Gebäude des Wissens. Bd. 1: Die Wissenslehre oder die Philosophie. 1. Teil: Das Verstandeswissen oder das formale Wissen, umfassend die auf die Philosophie vorbereitenden Wissenschaften. Stettin: R. Grassmann 1890, footnote, pages XIX—XXIV. Translation by Lloyd Kannenberg, February 2010.)

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Illustration 9. First page of Hermann Grassmann's final examination essay from secondary school, written in 1827 on the topic: "What is genuine scientific spirit and how does it reveal itself as such?" The transcription and translation are given on p. 495 [Archiwum Państwowe w Szczecine, Gimnazjum Mariackie w Szczecinie]