

THE DISSERTATIONS OF DOCTORS OF MEDICINE ACTIVE IN ESTLAND, LIVLAND AND COURLAND, DEFENDED AT EUROPEAN UNIVERSITIES IN THE EIGHTEENTH CENTURY

Arvo Tering

During the seventeenth century and the first half of the eighteenth century, learned medics of the Russian Baltic provinces and the Grand Duchy of Courland mostly found employment as physicians of wealthier towns and as medical doctors, running private practices or even as chief surgeons in the military hospitals of Tallinn and Riga. However, during the last two decades of the eighteenth century, the demand for educated doctors suddenly rocketed: the positions of county doctors were created in new county and district centres and mansion owners and landlords introduced a new trend by hiring private doctors into their mansions.

From 1802, the first generation of professors of medical and auxiliary disciplines of the newly established Tartu University became the core of learned medical specialists in the Baltic provinces. Most of the medical doctors that practiced in Estland, Livland and Courland during the eighteenth century and the first half of the nineteenth century had studied in the largest German universities – Halle, Jena or Göttingen, and to a lesser extent Leipzig, Königsberg, Erfurt, Erlangen and in some of the universities of the Netherlands, particularly Leiden.¹ Most of these medics had passed a process of being promoted to the position of a medical doctor,

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¹ For the university studies of medics, who worked in Estland, Livland and Courland, see Arvo Tering, “Baltimaade õpetatud arste koolitanud ülikoolid 17. sajandil ja 18. sajandi algul”, *Läänemere provintside arenguperspektiivid Rootsi suurriigis 16/17. sajandil*, III, ed. by Enn Küng, Eesti Ajalooarhiivi toimetised = Acta et commentationes Archivi Historici Estoniae, 17 (24) (Tartu: Eesti Ajalooarhiiv, 2009), 280–314; Arvo Tering, “Zur akademischen Ausbildung der Ärzte Estlands, Livlands und Kurlands des 18. und frühen 19. Jahrhunderts (1711–1810)”, *Forschungen zur baltischen Geschichte*, 6 (Tartu,

which confirmed their competence in the speciality and social reliability. High promotion expenses also assumed either the economic wealth of the student's parents or the skill to find benevolent support from patrons, either some institution or higher dignitaries. As a general rule, a doctor's degree was a pre-requisite for attaining a position and an important instrument to gain the trust and confidence of wealthy patients.

Doctoral students had to obtain a clear overview of the current research status of the studied topic, and inevitably their dissertation had to focus on some certain concept of treatment. This makes dissertation a first class source for studying the history of research and ideas. In the Nordic countries, dissertations have been appreciated as being sources of highly valuable information since the period between the two world wars, while this has only been the case in the German linguistic space since the 1960s, in Halle, and in other places in the last couple of decades.² An important landmark here is the organization of a number of conferences that have attached a new value to doctorate promotions and dissertations.³ The process of finding dissertations being defended in different universities is thriving and catalogues of such dissertations are drawn up to facilitate the work of historians who study the reception of ideas.⁴ At present, for example, lists and catalogues of eighteenth century medical dissertations from Halle, Basel, Helmstedt, Königsberg and Göttingen are available.

2011), 215–224. Numerous studies by Wolfram Kaiser, Heinz Kroschi, Werner Piechock and Arina Völker include both lists of dissertations and analyses of single dissertations.

² See, above all, Hanspeter Marti, "Der wissenschaftsgeschichtliche Dokumentationswert alter Dissertationen. Erschliessung und Auswertung einer vernachlässigten Quellengattung der Philosophiegeschichte", *Nouvelles de la République des Lettres*, 1 (1981), 117–132; Manfred Komorowski, "Research on early German dissertations: a report on work in progress", *The German book 1450–1750*, studies presented to David L. Paisey in his retirement (The British Library, 1995), 259–268; Manfred Komorowski, "Die alten Hochschulschriften: lästige Massenware oder ungehobene Schätze unserer Bibliotheken?", *Informationsblatt für Bibliotheken*, 5 (1997), 379–400.

³ The collected works of these conferences: *Promotionen und Promotionswesen an deutschen Hochschulen der Frühmoderne*, ed. by Rainer A. Müller, *Abhandlungen zum Studenten- und Hochschulwesen*, 10 (Köln, 2001); *Bilder – Daten – Promotionen: Studien zum Promotionswesen an deutschen Universitäten der frühen Neuzeit*, ed. by Rainer A. Müller, Hans-Christoph Liess und Rüdiger vom Bruch, Pallas Athene: Beiträge zur Universitäts- und Wissenschaftsgeschichte, 24 (Stuttgart, 2007); *Examen, Titel, Promotionen: Akademisches und staatliches Qualifikationswesen vom 13. bis zum 21. Jahrhundert*, ed. by Rainer Christoph Schwinges, *Veröffentlichungen der Gesellschaft für Universitäts- und Wissenschaftsgeschichte*, 7 (Basel, 2007).

⁴ I hereby extend my sincere thanks for the acquisition of these copies of dissertations from numerous European libraries to colleagues from the Library of Tartu University, Mr. Sulo Lembinen and Ms. Maria Luštšik. Initial investigation of these dissertations would have been impossible without the assistance of Mr. Anti Lääts.

My objective has been to obtain copies of as many dissertations of educated medical doctors acting in Estland, Livland and Courland during the early modern era, which were defended until 1800, and to use the materials for the study of medical ideas that reached the Baltic region. As copies of a large number of known dissertations have already been acquired and studied, my aim in this article is to offer an interim summary review of the initial status of dissertations, which were defended by medics working in the Baltic provinces and Courland from 1711–1810. The following questions are going to be asked: 1) What were the preferred universities for defending a doctoral thesis? 2) To what extent were the dissertations complied by doctoral students themselves and how big was the contribution of mentoring professors? 3) Who were the most frequently referred to authors in dissertations and which works were used most often as references? There is another substantial topic – what kind of new information about clinical studies did the dissertations offer and to what extent did the medics of the Baltic provinces and Courland use their own observations, made during clinical practice, in their dissertations. This article only fleetingly touches upon this subject.

But let us, first of all, sketch an overview of the phenomena that characterized the education of medics in the eighteenth century and also affected the doctoral promotion process. Extensive changes, which also affected the doctors of the Baltic provinces and Courland, took place in medical training during the eighteenth century. In particular, major changes took place in the training of surgeons. Until then, surgery had been considered a ‘handicraft profession’, where apprenticeship and fellowship periods had to be passed to acquire master’s skills. As the demand for military doctors skyrocketed, the first surgical academies were established in the eighteenth century, teaching the future military medical assistants, apart from surgery, theoretical medical and natural science subjects, which had been, to date, only taught in universities. These practice-oriented educational establishments offered theoretical medical knowledge, which was almost equal to the programmes offered by universities. Doctor’s diploma, ensuring legal privileges, was the only item missing from the package. Many surgeons defended their medical and surgical doctor’s dissertation at the medical faculties of universities. This practice was challenged by learned doctors, who considered the situation as an usurpation of the position they had considered a monopoly. However, it seems that surgeons who had studied at medical-surgical colleges were better equipped to deal with internal diseases, while educated medical doctors were not as successful in the sphere of surgery and practical obstetrics. Thus the surgeons with a non-academic

background who applied for positions of educated doctors, defended their doctoral thesis at universities as either externs or even under *in absentia* arrangement, which provided the grounds to recognize them as equals to educated medics, who boasted diplomas with higher qualifications. The same happened to doctors with surgeon's education, who practiced in the Baltic provinces and Courland.

On the other hand, the medical students of many universities visited the Medical-Surgical College of Berlin (*Collegium medico-chirurgicum*) to acquire practical experience and collect materials for their dissertations. In total 65 doctors of the Baltic provinces and Courland had visited the college. Six of these 34 educated medical doctors and 31 surgeons later acquired doctor's degree at a university.

The introduction of clinical medical studies in campuses, not just in the field of internal diseases but also surgery and obstetrics, particularly in Strasbourg, Göttingen, Jena and Vienna, was an innovation of extreme importance in medical education. On the one hand, this meant increasing the competence of educated medical doctors to have a say in surgery and obstetrical pathology, while on the other hand this opened the way for using clinical observations in dissertations.

The universities that served as the promotion sites for Baltic medics

Most of the 215 educated medics who practiced in the Baltic provinces and Courland from 1711–1810 had defended their doctoral thesis. 150 doctoral dissertations and exercise disputations that were defended in about twenty different universities in Germany, the Netherlands and Sweden are available as copies and have proven themselves as excellent sources for studying the arrival of medical and natural science ideas to the Baltic provinces and Courland.⁵

⁵ In 1750–59, 240 medical doctors were promoted in Halle, 4 (or 1.7%) of them being future doctors of the Baltic provinces. In Jena, there were 110 medical doctor candidates during the same decade and 7 or 6.4% of them chose Baltic provinces as the place of their practice; in 1760–69, Halle promoted 221 medical doctors, and 5 of them (2.3%) chose the Baltic provinces; 1770–79, Halle: 107 medical doctors, 3 to the Baltic provinces (2.8%); 1780–89, Göttingen: 178 medical doctors, 14 (7.9%) to the Baltic states; Jena: 89 medical doctors, 9 (10%) to the Baltic provinces; 1790–99, Göttingen: 191 medical doctors, 8 (4.1%) to the Baltic provinces; Halle: 196 medical doctors, 4 (2%) to the Baltic provinces; Jena: 273 medical doctors, 11 (4%) to the Baltic provinces (see Ulrich Tröhler, “‘Neuer Wein in alten Schläuchen’: Wechselnde Voraussetzungen und Beweggründe für die andauernde Beliebtheit der Göttinger medizinischen Promotionen im 18. Jahrhundert”, Ulrich Tröhler, Sabine Mildner-Mazzei, *Vom Medizinstudenten zum Doktor: die Göttinger medizinischen Promotionen im*

On the other hand, if certain reservations are made, the dissertations of the doctors of the Baltic provinces and Courland that were defended at the universities of Germany and the Netherlands would represent a segment of a cross-section of medical dissertations, which were defended during the period concerned in, above all, the universities of Halle, Jena and Göttingen. We will see that during some of the decades the dissertations by Baltic doctors formed a significant part of all the medical dissertations defended at these universities, particularly in the 1780s in Göttingen and Jena when the respective share amounted to 8–10 per cent.

Table 1. Number of dissertations on medical subjects in European universities in the eighteenth century

University	Number of medical dissertations
Jena	34, 12 of these before Loder, 22 during Loder's office
Halle	28, 2 of these not located. 22 until 1780, 6 after 1780
Göttingen	24, 2 of these not located. 3 until 1780, 21 after 1780
Königsberg	25, 11 of these not located
Erfurt	15, 9 of these not located
Leiden	14, 1 of these not located
Erlangen	9, 4 of them at Isenflamm
Leipzig	8
Rostock	4, 1 of them not located
Frankfurt	3
Utrecht	2
Harderwijk	2, 1 of them not located
Kiel	2, 1 of them not located
Strasbourg	2
Wittenberg	2
Freiburg	1
Giessen	1
Greifswald	1
Marburg	1
Tübingen	1
Uppsala	1
Colleges of St. Petersburg	1
In total	177 dissertations, 29 of these not located, available – 148

18. Jahrhundert: Sozialhistorisch-vergleichender Überblick, Göttinger Universitätschriften, Serie C, Kataloge 3 (Göttingen, 1993), 9–49 (13); Jena candidates by decades: Ulrich Rasche, “Quellen zum frühneuzeitlichen Promotionswesen der Universität Jena”, *Promotionen und Promotionswesen an deutschen Hochschulen der Frühmoderne*, 81–110 (99).

Number of dissertations

The major share of dissertations is inaugural dissertations, i.e. doctoral theses, but there is also a limited number of exercise disputations. Approximately one half of the doctoral theses of the doctors of the Baltic provinces and Courland were defended in four universities: Jena, Halle, Göttingen and Königsberg. In both Jena and Göttingen, the major share of the dissertations of medics of the Baltic provinces and Courland were defended during the last two decades of the eighteenth century. In Jena, one of the earlier busy periods for defending dissertations was the middle of the eighteenth century, mostly under the presidency of Carl Friedrich Kaltschmied (1706–69), but the most intensive period for defending dissertations in Jena was in the 1780s and 1790s. Most of the authors of dissertations were from the Baltic provinces and Courland, as their parents chose to send them to Jena, where Justus Christian Loder (1753–1832), the son of Riga Lyceum rector of their own youth, was working as a medical professor. Apparently, they sub-consciously hoped that ‘the professor next door’ would keep an eye on the behaviour and progress of their sons. The number of students studying medicine in Jena during that period grew most significantly. Loder’s influence was, undeniably, notable, but the total number of medical students studying in Jena increased sharply in that particular period in general. During the last quarter of the eighteenth century, Jena used to be the largest forge of medical doctors in the whole German-speaking world.⁶

Loder’s excellent teachings of anatomy and surgery and clinical training in obstetrics were trend-setters and drew students interested in medical and natural sciences to Jena from many regions. Loder’s personality was a regular decoy bird, which attracted students from Livland to Jena. However, when we look closer at the dissertations and biographies of medical doctors of the Baltic provinces and Courland, we do not find evidence to prove Loder’s special closeness to medical students who were his fellow countrymen. Their biographies do mention participations in anatomical post mortems, performed by Loder, and practical work in the Loder-Hufeland clinic. But there were also many of those who participated in the work of a clinic run by Loder’s competitor Johann Christian Stark (1753–1811). There was even a notable group of students from the Baltic provinces, who chose Christian Gottfried Gruner (1744–1815) and Ernst Anton Nicolai (1722–1802),⁷ who were not on very friendly terms with Loder, as

⁶ Rasche, “Quellen zum frühneuzeitlichen Promotionswesen der Universität Jena”, 100–101.

⁷ Short biographies of Gruner and Nicolai: Susanne Zimmermann, Horst Neuper, *Professoren und Dozenten der Medizinischen Fakultät Jena und ihre Lehrveranstaltungen*

their mentors and tutors. Their contribution to medical history has not been rated very highly.

The importance of Göttingen University as the trainer of medical doctors of the Baltic provinces and Courland was insignificant until the 1780s. However, this university became highly important during the last decades of the century, when August Gottlieb Richter (1742–1812), Heinrich August Wrisberg (1739–1808), Johann Heinrich Fischer (1759–1814), Friedrich Benjamin Osiander (1759–1822) and Johann Friedrich Blumenbach (1752–1840) worked as medical professors there.⁸ The combined efforts of all these professors raised the medical faculty of Göttingen University to the position of one of the top-ranking centres of medical studies in Europe.

The medical faculty of the University of Halle used to be a centre for Prussia during the entire eighteenth century, while remaining particularly attractive for the German-speaking community during the first half of the eighteenth century. Students were happy to defend their doctoral thesis at the University of Halle – the production of medical dissertations was very high there.⁹ The golden area for the disputations of medics of the Baltic provinces and Courland was the first decade of the eighteenth century, under the presidency of Georg Ernst Stahl and Friedrich Hoffmann, and in 1730–50, under the presidency of Hoffmann and his supporters Büchner and Böhmer, as well as Juncker, who was a follower of Stahl.

Königsberg University was the closest to the Baltic region, particularly Courland. Two trends stand out as we look at the studies of Baltic medics at Königsberg University. On the one hand, there were many doctors coming from Eastern Prussia and the immediate vicinity of Königsberg, who decided to try their luck due to the excessive production of doctors in Courland. On the other hand, a large number of surgeons, particularly those who had studied in Medical-Surgical College of Berlin and lacked the academic background, defended their dissertation in the medical faculty of Königsberg University to obtain the position of educated medical doctor; this was primarily the case for the province doctors in Livland. As it has been impossible to locate approximately a half of the dissertations

1770–1820 (Jena, 2008), 176–178, 209–210.

⁸ On Göttingen University, see Günther Meinhardt, *Die Universität Göttingen: ihre Entwicklung und Geschichte von 1737–1977* (Zürich, 1977), 36–41.

⁹ See Wolfram Kaiser, Heinz Krosch, “Zur Geschichte der Medizinischen Fakultät der Universität Halle im 18. Jahrhundert, XVI: die Disputationen und Doktoranden der Jahre 1700–1749, *Wissenschaftliche Zeitschrift der Universität Halle*, XV:6 (1966), 1011–1124.

that were defended in Königsberg, one can assume that some of them were never published in print.¹⁰

Only two universities are represented in the next group of universities, where more than ten doctors from the Baltic provinces and Courland have defended their dissertations: those of Leiden and Erfurt. In the University of Leiden, the number of dissertations defended by doctors of the Baltic provinces and Courland was largely the same as it had been in the seventeenth century.¹¹ However, during this period, the University of Leiden, where the last doctoral promotions of medical doctors of the Baltic provinces and Courland had taken place in the 1770s, was outshone by the University of Halle. Dissertations were defended under the presidency of both Boerhaave and his successors, Gaubi and Albinus. While 178 doctoral dissertations were, in total, defended under the presidency of Boerhaave, 48 students among them came from German-speaking countries.¹² During that period, four doctors from the Baltic provinces and Courland also defended their dissertations in Leiden, but without presidency. However, Boerhaave was mentioned as being a mentor in two of those dissertations.

The situation in Erfurt University was atypical, as this was one of the smallest German universities, its hinterland mostly consisted of Lutheran Thuringia and it belonged to Catholic Mainz as an enclave. The professors from the medical faculty had a good reputation and many students came

¹⁰ For Königsberg dissertations, see Manfred Komorowski, *Promotionen an der Universität Königsberg 1548–1799: Bibliographie der pro-gradu-Dissertationen in den oberen Fakultäten und Verzeichnis der Magisterpromotionen in der philosophischen Fakultät* (London, New York, Paris, 1988); The online bibliography of the publications of Königsberg University: <<http://www.forschungen-engi.ch/Koenigsberge/suchen.htm>> (20.9.2010); see Manfred Komorowski, Hanspeter Marti, “Erfassung und Erschließung von Königsberger Universitätsschriften der Frühen Neuzeit – Eine Projektskizze”, *Königsberger Buch- und Bibliotheksgeschichte*, ed. by Axel E. Walter (Köln, Weimar, Wien, 2004), 787–800; Hanspeter Marti, “Frühneuzeitliche Dissertationen der Universität Königsberg: Erschließung und historiographische Bedeutung eines vernachlässigten Quellencorpus”, *750 Jahre Königsberg: Beiträge zur Geschichte einer Residenzstadt auf Zeit*, Tagungsberichte der Historischen Kommission für ost- und westpreussische Landesforschung, 23, ed. by Bernhard Jähnig (Marburg, 2008), 271–302.

¹¹ While 14 of the medical doctors practicing in the Baltic provinces in 1711–1810 defended their doctoral dissertations in Leiden, the same figure for doctors practicing in 1601–1710 only amounts to 9 (compared by Tering, “Baltimaade õpetatud arste koolitanud ülikoolid”, 286).

¹² Gerrit Arie Lindeboom, *Herman Boerhaave: the man and his work* (Rotterdam, 2007), 230. About dissertations defended in Erfurt, see Horst Winkler, “Die Bedeutung der Erfurter medizinischen Fakultät, dargestellt an den Doktorpromotionen der Jahre 1392–1816”, *Beiträge zur Geschichte der Universität Erfurt*, VII (1960), 61–66.

to Erfurt University to defend their dissertations there.¹³ The locations of most of the dissertations defended by the medics of the Baltic provinces and Courland in Erfurt are unknown; furthermore, there are a number of dissertations with unknown titles.¹⁴ Among those promoted to doctorate were both the inhabitants of the Baltic provinces and Courland, who had less expenses in Erfurt when defending their dissertations and the waiting list was also shorter than in larger neighbouring universities. There were also doctors coming immediately from Erfurt or its vicinity, who travelled far in their search for employment due to the excessive production of medics.

Above all, Leipzig, Erlangen and Rostock stand out from among the rest of the universities. The number of dissertations defended there by the medics of the Baltic provinces and Courland was small, but some of them are highly interesting for the study of the history of ideas. Doctoral dissertations that were defended in Utrecht, Strasbourg, Freiburg, Greifswald or Uppsala, although represented by a couple or even a single paper, have contents of outstanding importance.

To be promoted as a doctor, a substantial professional examination had to be passed in addition to the defence of the dissertation.¹⁵ During the examination, every regular professor asked the candidate a question from his sphere of lectures, expecting a substantial answer. The ledger of minutes of the examination committee of the medical faculty of the University of Jena from 1787 provides a good overview of the questions that were asked of the examinants, combined with a valuation of examination results. Allow me to give an example of some of the questions that were asked of a prospective doctor of the Baltic provinces and Courland by professors:

- In 1791, a future province doctor of the island of Saaremaa, Blaubeerg, was asked to characterize digestion process, high temperature caused by inflammation and treatment of the problem, pleurisy and distribution and functions of medical specialities;
- In 1794, Christian Heinrich Fick was asked whether digestion only takes place in the stomach, where the stomach is located and what is its shape; he also had to answer a question about different types of fever;

¹³ To date, a bibliography of medical dissertations defended in Erfurt has not been published. Unfortunately, the manuscript of the list of medical dissertations defended in Erfurt by Richard Loth, *Die auf der königlichen Bibliothek vorhandenen Inauguraldissertationen, Disputationen und Programme der medizinischen Fakultät der Universität Erfurt aus den Jahren 1629–1816*, was unavailable to the author.

¹⁴ See Thomas H. Broman, *The transformation of German academic medicine 1750–1820* (Cambridge University Press, 1996), 32–33.

¹⁵ Examen-Protocoll, für die von der medizinischen Fakultät examinirten Candidaten, angefangen im September 1787 (UA Jena, Bestand L, Nr. 405).

- Bornwasser had to discuss the anatomy of pericardium and its diseases in 1794;
- Ludwig Reinhold Stegmann was questioned in 1795 about the physiology of genitals, the treatment of bone fractures, congestion and its reasons and also gastric and inflammation induced fever and their respective treatment. A forensic question, concerning the cause of the death of an infant, also had to be answered.

Such a substantial examination provides a good overview of the knowledge of a student by the time he came to defending his dissertation. As a general rule, dissertations were published before defending. How long were the dissertations defended by the medical doctors of the Baltic provinces and Courland in the eighteenth century? Did it differ by universities?

The average length of dissertations was thirty pages. While in Jena and Leiden, the length was more or less the average, in Halle and Göttingen it was 41 pages. While the internal structure of a dissertation was generally standard, the lengths were very different both by and within universities. This serves to demonstrate that strict length requirements were not established for a doctoral thesis. Therefore, the lengths ranged between 22–80, 18–116, 13–54 and 10–40, respectively, in Halle, Göttingen, Leiden and Königsberg. The dissertations, which were defended in the universities of Utrecht and Harderwijk in the Netherlands, were somewhat shorter: the average was fifteen pages and ranged from twelve to twenty pages.

The majority of doctoral dissertations that were defended in the eighteenth century, and particularly during the second half of the century, were defended without *praeses*. Until the last quarter of the eighteenth century, at least in Halle and Jena, medical dissertations were all defended under the presidency of some professor. Who presided most frequently over the doctoral theses of medical doctors of the Baltic provinces and Courland?

Among the professors of Halle, the representatives of Friedrich Hoffmann's school mostly stand out as the *praesides* of dissertations for doctors of the Baltic provinces and Courland, presiding in the following twelve occasions: Hoffmann – 2, Schulze – 2, Büchner – 5, Böhmer – 3. Professors of the Georg Ernst Stahl school only presided in five occasions: Stahl – 2, Alberti – 2 and Juncker – 1. Philipp Friedrich Theodor Meckel (1756–1803) was holding presidency at the defending of four dissertations during the last decades of the eighteenth century.

In Jena, it was mainly Carl Friedrich Kaltschmied who presided over the dissertations of medics of the Baltic provinces and Courland in the middle of the eighteenth century. Later, Ernst Anton Nicolai presided on

three occasions. During the last decades of the century, dissertations were defended without presidency, both in Jena and Göttingen.

Many studies have expressed some doubt about whether and to what extent the respondents wrote their dissertations themselves. This will probably remain an ongoing matter for debate among researchers of dissertations. Quite obviously, many theses were prepared by the presiding professors, and all respondents had to do was to try to defend the thesis while opponents attempted to reject the statements that such papers included. Occasionally, there were accounts of professors who ran an unfair side business of selling ready-made texts of dissertations to students, who had problems with writing their papers. However, these examples should mostly be treated as curious exceptions. Still, it could be quite common for presiding professors to do some hard editing work on verbal and linguistic aspects of texts prepared by students.

The majority of dissertations of doctors practicing in the Baltic provinces and Courland in the eighteenth century and during the beginning of the nineteenth century were prepared without the presidency arrangement. Even upon the participation of the *praeses*, there is generally no doubt that the majority of the paper is still written by the respondent. However, the origin of the topic of the dissertation has been mentioned in the introductory part (*proemium*) of many of the dissertations. Quite often, inspiration was obtained from an earlier dissertation of the *praeses* or some other professor, which was linked to the same subject. Dissertations reveal that on most occasions students were in a more trusting relationship with some of the professors and could always approach them for advice. In many dissertations, some words of acknowledgment have been dedicated to the mentoring professor (*praeceptor, fautor*).

For the purposes of studying the history of ideas, references given in dissertations are highly valuable when dealing with some problem, indicating that the student received inspiration from the lectures of his teacher, an anatomical demonstration or a clinical medical record. A good example of an acknowledgement to the professor in a dissertation, which could also serve as a fulcrum for unravelling the biography of a student, are the grateful references by Karl Espenberg (1761–1822) to his teacher (*fautor*) Johann Philipp Julius Rudolph, professor of Erlangen (1729–97).¹⁶ Espenberg,

¹⁶ “Ea ab ill. ... professore celeb. Rudolpho, quem praeceptorem, quoad vixero, pia grataque mente venerabor, mecum communicata est, cui me pro novo hoc favoris documento longe sentio hac profiteor obstrictissimum”, Carl Espenberg, *Diss. inaug. de febris mercurialis efficacia in sananda lue venerea dubia* (Erlangen, 1796), 40.

a province doctor in Rakvere, won recognition as the ship doctor during the circumnavigation of the world by Adam Johann von Krusenstern from 1803–06. Such acknowledgement leads to an assumption, which encourages further investigation, that both Espenberg's choice of subject for his dissertation and the decision to become a ship doctor were largely inspired by his teacher. For example, his dissertation, which discussed the treatment of syphilis, was based on the medical records of one of Rudolph's patients. Rudolph had previously studied the same subject with a young doctor.¹⁷ Espenberg's career as a ship doctor during the circumnavigation was a logical outcome, as he served as a doctor in a manor belonging to the parents of Adam Johann von Krusenstern, the initiator of the journey. But it seems that subconsciously he was consumed by a desire to travel even during his studies in Erlangen. The route of the circumnavigation passed the regions where Espenberg's teacher, Rudolph, had served as a doctor in the colonies of the Netherlands (Bengal, Japan, China and Batavia) in 1755–65.¹⁸

There are great many examples of a *praeses* suggesting that the student write a dissertation on a subject that he himself had studied before. A physician of Narva, Johan Gottfried Keiling, defended his thesis under the presidency of Michael Albert in Halle.¹⁹ Both his mentor and his teacher, Ernst Georg Stahl, had studied this topic previously. Keiling's colleague, Paul Curtius, defended his dissertation on climatic conditions in Halle under the presidency of Friedrich Hoffmann.²⁰ The latter had earlier published a work on the same subject, *Diss. de temperamento fundamento morum et morborum in gentibus*. Christoph Wilhelm Hufeland (1762–1836), who was the preceptor of Ludwig Reinhold Stegmann²¹ from Tartu, who defended a dissertation on enlarged thyroid in Jena, had earlier studied the issue of *Skroffelkrankheit* himself.

It was important to find benevolent benefactors, who would cover most of the expenses related to defending the dissertation. Therefore, many students had dedicated their works to the members of the Medical College of St. Petersburg, and particularly its president, who was the person granting

¹⁷ Charles C. Marc, *De opii in luis venereae sanatione efficatia commentatio, praes. Johann Philipp Julius Rudolph* (Erlangen, 1792).

¹⁸ About Johann Philip Julius Rudolphi see Johann Georg Meusel, *Lexikon der vom Jahr 1750 bis 1800 verstorbenen Teutschen Schriftsteller*, 11 (Leipzig, 1811), 464–466.

¹⁹ Johann Gottfried Keiling, *Dis. med. inaug. de haemorrhoidum consensu cum calculo et podagra, praes. Michael Alberti Oktober* (Halle, 1720).

²⁰ Paul Curtius, *Diss. inaug. med. de medendi methodo varia pro climatum diversitate, praes. Friedrich Hoffmann* (Halle, 1734).

²¹ Ludwig Reinhold Stegmann, *Diss. inaug. medico-chirurg. de struma* (Jena, 1795).

the *venia practicandi* license. The Director General of the Russian Medical College, Hermann von Vietinghoff (1722–92), was addressed very often from 1788–92. However, dedications to local nobility or city magistrates were also quite common.

Special attention needs to be given to the fact that a number of students from Riga addressed the city physician of Riga, Anton Truhart (†1784), as *fautor*. Truhart had served as a lecturer in Jena for many years.²² One can assume that medical students from Riga valued his practical advice about both choosing the place of studies and preparing a dissertation.²³ Quite a few of Truhart's colleagues had listened to his lectures in Jena. For example, Gotthard Wilhelm Gourband from Courland used to frequent the lectures that Truhart gave on physiology, semiotics and special therapies in 1764.

Subject matters of dissertations

How good source material are medical dissertations for the study of early modern medical ideas? This question could be answered the best possible way after studying all of the dissertations; the contribution of every individual dissertation to the reception of ideas has a different weight, but they are all valuable as source material. Let us have a look, as a first step in such an inquiry, what were the main subject matters of dissertations.

Dissertations have, as a general rule, a defined structure. The introduction (*proemium*) explains the nature of the problem discussed and the motives for investigating this subject. The dissertation begins, as a general rule, with a paragraph, which provides an overview of the main terms and definitions used. A nosological chapter then follows, setting out the etiology of diseases and descriptions of symptoms. The last chapter usually contains a discussion of therapy, suggesting methods of treatment, medications and their recipes.

²² About Truhart see Isidor Brennsohn, *Die Ärzte Livlands von dem ältesten Zeiten bis zur Gegenwart. Ein biographisches Lexikon nebst einer historischen Einleitung über das Medizinalwesen Livlands* (Mitau, 1905), 401; On Truhart's lectures in Jena from summer term 1764 until summer term 1767, see *Das Vorlesungsangebot an der Universität Jena von 1749 bis 1854*, ed. by Horst Neuper and Katarina Kühn and Matthias Müller (Weimar, 2003), 54, 58, 59, 63, 67, 68, 72.

²³ Truhart was thanked as both a autor and patron by Gotthard Johann Glaser, Carl Gotthelf Weitzenbreyer and Peter Georg Weyer.

Table 2. Subject matters of dissertations of medical doctors, who practiced in the Baltic provinces and Courland from 1711–1810*

Subject	Number
Medical theories	8 (4 of which in Königsberg)
Anatomy	6
Physiology	18
Reasons for diseases and diagnosing	9 (5 of which in Halle)
Surgery and blood-letting	10
Pregnancy and obstetrics pathology, gynaecological diseases	19
Eye diseases	4
Ear diseases	1
Throat and pharyngeal diseases	2
Pulmonary diseases	4
Intestinal diseases	6
Intestinal parasites	1
Hepatitis	2
Fevers and inflammations	14
Coronary and vascular diseases	3
Rheum and arthritic diseases	2
Neurological diseases	9
Mental diseases	3
Metabolic diseases	3
Sexually transmitted diseases	2
Health care and climatic environment, dietetics, scurvy	11
Medical police	1
<i>Materia medica</i>	18
Chemical applications	8
Botany	2
Zoology	1

* subject matters of 171 dissertations of the known 177 are known.

Generally, dissertations could be treated as abstracts of studies published to date on the subject discussed, providing an overview of the current state of research. However, step-by-step, examples of clinical records, particularly medical records, found their way into dissertations as a novel element. In most cases, these were taken from relevant collected materials, but there are also some dissertations, which include facts observed during one's own clinical practice or materials from journals of medical records of clinics. While in the seventeenth century dissertations were mostly based on some medical theory, in the eighteenth century the majority of dissertations seem to rely upon the fundamental thesis of Hippocrates, which states that a doctor must rely, above all, upon experience acquired

by means of observation. However, an initial inspection of dissertations shows that a certain medical theory was used to explain the reason and nature of diseases. In relation to therapy, it seems that regardless of different theories, medications, which were egestive, diaphoretical and induced vomiting, were used to cleanse the organism until the implementation of homeopathy and the discovery of pathogens. Both chemical medications (mercury and antimony compounds, iron preparations, etc.) and blood-letting were highly regarded. Also, medications that helped to strengthen the organism were used. But this is solely an initial working hypothesis. The issues of therapy need to be studied in depth. Most of these dissertations would be worthy of further thoroughgoing investigation for the purposes of the history of ideas. However, let us take a quick look at the most important medical subjects, which seem to hold more weight for the study of the development of ideas.

SURGERY. The number of defended dissertations on surgery was insignificant. However, in the eighteenth century many professors attempted to draw together the teaching of internal diseases and surgery. Furthermore, we should remember that this was the period, when surgery started to become an academic discipline, and it became equal in importance to internal diseases by the nineteenth century. Dissertations on surgery mostly focus on wounds and their life-threatening nature, particularly from a forensic aspect. While in medical practice this was treated as the competence of a wound doctor, an educated medical doctor was also supposed to pass an expert decision on a wounded or deceased person or provide a professional opinion on a surgeon's decision. One of the dissertations on aspects of surgery deals with indications of paracentesis of pleura, while another discusses a successful breast cancer surgery.²⁴ Blood-letting was also a function of surgeons and barbers. In the nineteenth century, blood-letting was considered as an important if not tacit method of treatment.²⁵ In dissertations defended at three universities – Erfurt, Halle and Göttingen – the benefits and disadvantages of blood-letting are discussed, but the method as a cure is never doubted. A work defended in Halle by Jakob Friedrich Sander in 1751 is based on the subject

²⁴ Johann Andreas Lobenwein, *Diss. inaug. de paracentesi thoracis* (Jena, 1785); Michael Ludwig Knobloch, *Diss. De cancro mammae sinistrae observato et curato* (Erfurt, 1740).

²⁵ Concerning blood-letting in the 18th century, see Marion Maria Ruisinger, "The circulation of the blood and venesection: on the relation between medical theory and practice in the early eighteenth century", *Medical theory and therapeutic practice in the eighteenth century: a transatlantic perspective*, ed. by Jürgen Helm and Renate Wilson (Stuttgart, 2008), 37–60.

and is suggested by the supervisor, Johann Juncker.²⁶ In this case, blood-letting plays an important role in the concept of the treatment discussed.²⁷

GRAVIDITY AND OBSTETRICS PATHOLOGY. In the eighteenth century, the teaching of obstetrics was given an important place in the medical educational establishments of German-speaking countries.²⁸

Strasbourg was the first place in German-speaking countries, which began training students in the field of obstetrics, but until 1768 it was institutionally done outside the university.²⁹ In the eighteenth century, obstetrics became a distinctive discipline that comprised a part of the practical medicine syllabus of universities. Until then, obstetrics pathology had been one of the side-subjects of lectures on surgery. During the second half of the eighteenth century, anatomy, surgery and midwifery were mostly taught by a single professor.³⁰ In Göttingen (1751), Vienna, Jena (1754) and Paris (1779), obstetrics was taught as a separate subject. In many universities, obstetrics – just like teachings on eye diseases – was only introduced as a separate subject in the nineteenth century. In Halle, only theoretical lectures were given – for moral and theological reasons, the clinical examination of pregnant women was not allowed. For that reason the practical teaching of obstetrics only became possible at the very end of the eighteenth century.³¹

As we will further see, future medical doctors of the Baltic provinces and Courland were highly interested in studying obstetrics, as more than one in every ten dissertations focused on either gravidity or obstetric pathologies. Twenty dissertations on obstetrics and pathologies were defended in nine universities. Here, we must highlight an interesting paradox – no less than five dissertations on obstetrics and midwifery were defended at the University of Halle. This university did have a clinic for general diseases and

²⁶ Jacob Friedrich Sander, *Diss. inaug. med.-practica de regulis generalioribus circa venaesectionem observandis* (Halle, 1751).

²⁷ Wolfram Kaiser, "In memoriam Johann Juncker (1679–1759)", *Johann Juncker (1679–1759) und seine Zeit. Hallesches Juncker-Symposium 1979*, ed. by Wolfram Kaiser and Hans Hübner, Wissenschaftliche Beiträge der Martin-Luther-Universität Halle-Wittenberg, 29 (Halle, 1979), 7–28 (16).

²⁸ Hans-Christoph Seidel, *Eine neue Kultur des Gebärens: die Medikalisierung von Geburt im 18. und 19. Jahrhundert in Deutschland* (Stuttgart, 1998).

²⁹ Axel Karenberg, *Lernen am Bett der Kranken: die frühen Universitätskliniken in Deutschland (1760–1840)* (Hürtgenwald, 1997), 36–41.

³⁰ Hans-Heinz Eulner, *Die Entwicklung der medizinischen Spezialfächer an den Universitäten des deutschen Sprachgebiets* (Stuttgart, 1970), 35.

³¹ Karenberg, *Lernen am Bett der Kranken*, 33.

surgery, but it did not provide clinical training in obstetrics, which would have presented experiences and observations to be used in a dissertation. Indeed, some of the students had also studied at the medical-surgical colleges of Berlin or Göttingen, where it was possible to practice midwifery. The dissertations of Halle discussed tying the umbilical cord of new-born babies, muscular energy during parturition, extra-uterine pregnancy, and reasons for sterility in both sexes and relations between the breasts and the uterus.³² Doctoral students saw Philipp Adolf Böhmer, who gave enthusiastic lectures on obstetrics and midwifery, and Philipp Friedrich Meckel, head of the surgical clinic, as their *praeceptors*. As for Meckel, some students considered it important to emphasize the great service of his father Johann Friedrich Meckel in teaching obstetrics in Berlin.

As for Jena, which boasted two authorities who extended clinical teaching in the sphere of obstetrics – Justus Christian Loder and Johann Christian Stark – only one future doctor of the Baltic provinces and Courland defended a dissertation on this subject, and even this was done under the presidency of Loder’s antipode, Christian Gottfried Gruner.³³ Four dissertations that were defended in Göttingen discussed premature labour, intra-uterine polyps, morning sickness during pregnancy and the correct handling of the forceps during labour.³⁴ Well-known professionals, like Johann Georg Roederer, August Gottlieb Richter, Johann Heinrich Fischer and Friedrich Benjamin Osiander, were addressed as the *praeceptors* of some of the dissertations. A society of friends of obstetrics was also organized in Göttingen (*Gesellschaft von Freunden der Entbindungswissenschaft*),³⁵ and

³² Johann Burchart, *Diss. med. de necessaria funiculi umbilicalis vi vasorum structurae in nuper natis deligatione* (Halle, 1745); Otto Friedrich Rosenberger, *Diss. inaug. de viribus partum efficientibus generatim, et de utero speciatim ratione substantiae musculosae et vasorum arteriosorum* (Halle, 1791); Christian Friedrich, *Deutsch. Diss. inaug. med. de graviditate abdominali singulari observatione ad tab. IV. Aeneas illustrata, cum quibusdam ad historiam litterariam additamentis, huc facientibus* (Halle, 1792); Johann Heinrich Eckhoff, *Diss. de causis sterilitatis non absolutis in utroque sexu* (Halle, 1773); Gotthard Wilhelm Reichard, *Diss. inaug. med. de uteri connexione cum mammis* (Halle, 1753).

³³ Carl Gottlieb Mylius, *Diss. inaug. med. de signis foetus vivi ac mortui* (Jena, 1789).

³⁴ Andreas Lindemann, *Diss. de partu praeternaturali, quem sine matris aut foetus sectione absolvere non licet operatori* (Göttingen, 1755); Johann Friedrich Goertz, *Diss. inaug. med.-chir. in qua ad ligaturam polyporum uteri instrumentum* (Göttingen, 1783); Johann Friedrich Körber, *Diss. inaug. de nausea ac vomitu gravidarum* (Göttingen, 1787); Carl Wilhelm Hehn, *Diss. inaug. med. de forcipis obstetriciae usu recto et applicatione* (Göttingen, 1796).

³⁵ Friedrich Benjamin Osiander, *Kurze Nachricht von der Entstehung und Einrichtung der Gesellschaft von Freunden der Entbindungswissenschaft* (Göttingen, 1796).

some students from the Baltic provinces and Courland (Otto Fabian Beck and Carl Wilhelm Hehn) can also be found among its members in the 1790s.

Only two dissertations were defended in Strasbourg, where the practical teaching of midwifery started in the German-speaking countries. One discussed the position of infant's head during labour and another dealt with premature labour.³⁶ Both students regarded the teacher of the school of midwives, Johann Jakob Fried (1681–1769), as their mentor. But in essence, the authors of dissertations about using technical equipment during labour, defended in Königsberg³⁷ and the preventive treatment of child bed purple (*purpura puerpurarum*) in parturients,³⁸ which was defended in Freiburg, both had a background of studies in Strasbourg and valued highly the clinical training they had received there. What concerns Leiden, one dissertation defended there discussed the lack of breast milk during nursing³⁹ and another – incontinence during pregnancy.⁴⁰ In both cases, Hieronymus David Gaub was mentioned as one of the *praeceptors*.

MEDICAL TOPOGRAPHIES AND HEALTHY LIFESTYLE.⁴¹ Since Hippocrates, healthy lifestyle has been promoted, no matter whether we are discussing moderate and well-balanced eating, active exercising, good sleep, etc., which can be fitted under the definition of 'dietetics' in general. Galenus has summarised the factors that contribute to a healthy lifestyle, as six 'unnatural' things (*res non naturales*), which come from outside the body and influence its health. They are 1) air and light; 2) food and drink; 3) movement and rest; 4) sleep and being awake; 5) secretes and excretes (*secreta et excreta*); 6) emotions (*affectus animi*).

Based on these principles, a large quantity of literature on healthy living habits and so-called medical topography has been published since the Middle Ages. Medical topography works also describe the climatic conditions, living and eating habits and related hygiene practice in the eighteenth century.

³⁶ Johann Friedrich Erasmus, *Diss. inaug. de partu difficili ex capite infantis* (Strasbourg, 1747); Peter Georg Weyer, *Diss. inaug. Medico-obstreticalis de partu praeternaturali propter clunes ad os uteri conversas* (Strasbourg, 1773).

³⁷ Johann Christian Scheltz, *Diss. inaug. observationes nonnullae et corollaria de partu laborioso* (Königsberg, 1785).

³⁸ Samuel Georg Hollenhagen, *Diss. inaug. med. de purpurae puerperarum prophylaxi, adnexis adversariis de embryulcia* (Freiburg, 1784).

³⁹ Johann Wilhelm Thorwarth, *Diss. practico-med. inaug. de lactis defectu* (Leiden, 1764).

⁴⁰ Johann Heinrich Blumenthal, *Diss. inaug. de Ischuria hysterocystica* (Leiden, 1773).

⁴¹ Heikki Mikkeli, *Hygiene in the early modern medical tradition*, *Annales Academiae Scientiarum Fennicae, ser Humaniora*, 305 (Helsinki, 1999).

A thesis by Ambrosius Bergmann, which was defended in Leipzig in 1762, focused on the diseases of the rural population of Livland and highlighted the climatic and medical-topographic factors that affected the health of the inhabitants of the Baltic provinces and Courland.⁴² The dissertations of father and son, the Walthers, which discuss bathing and sauna culture in, among other places, the Nordic and Baltic countries, can also be classified under this category.⁴³

A number of dissertations discuss climatic differences – the effect of cold and warm air on health,⁴⁴ and the length of healthy sleep.⁴⁵ Several dissertations discuss healthy eating, which involves balanced proportions of food of animal and vegetable origin.⁴⁶ In the eighteenth century, the interest in healing waters abruptly increased and therefore several doctors of the Baltic provinces and Courland discussed the therapeutic properties of mineral water and their use as a part of diet.⁴⁷ One dissertation discusses the harmful effects of excessive use of spirits on the human health.⁴⁸ Scurvy, no matter whether diagnosed on a long journey by sea or surrounded outdoor camp, can be related to the influence of vitamin deficiency on the health of a human body. Scurvy among the Saxon troops, who were surrounded by Swedes in a field camp in Daugavgrīva in 1703, is discussed by Saxon army doctor Nicolaus Buchner in his dissertation, which he defended in 1705 in Leiden.⁴⁹ A later medical professor at Rostock University, Christian Ehrenfried Eschenbach, defended his dissertation on scurvy in the Baltic Sea nations in 1735.⁵⁰ Allegedly, he had stayed in Russia for some years before

⁴² Ambrosius Bergmann, *Diss. inaug. med. de ruricularum Livoniae statu sano et morbo* (Leipzig, 1762); see Andrejs Johansons, *Latvijas kultūras vēsture 1710–1800*, Latvijas vēstures serija, 7 (Stockholm, 1975), 190.

⁴³ Johann Gottlieb Walther, *Diss. med. inaug. de balneorum aquae simplicis usu dietico* (Leipzig, 1744); Justus Samuel Walther, *Specimen medicum inaug. de balneorum calidorum usu in regionibus septentrionalibus* (Leiden, 1772).

⁴⁴ Gottfried Albrecht Germann, *Diss. inaug. de influxu aeris frigidi et calidi in morbos et sanitatem hominum* (Kiel, 1796).

⁴⁵ Johann Wilhelm Lieb, *Diss. de justa somni salutaris quantitate et mensura*, praes. Gustav Christian Handtwig (Rostock, 1755).

⁴⁶ Justus Tottinus, *Diss. inaug. med. de diaeta* (Halle, 1708); Nicolaus Himsel, *Diss. inaug. med. de victu salubri ex animalibus et vegetabilibus temperando* (Göttingen, 1751); Carl Friedrich Parlemann, *Diss. inaug. de victu animali* (Göttingen, 1797) (not located).

⁴⁷ Georg Tobias Blumer, *Commentationes de diversa indole aquarum et praecipue de fonte Smordoniano* (Königsberg, 1789).

⁴⁸ Georg Dietrich Johannsohn, *Diss. inaug. med. de noxis, quae ex potentis calidis aut frigidis spirituosus et aromaticis, praecipue ex eorum abusu enascuntur* (Erfurt, 1786).

⁴⁹ Nicolaus Buchner, *Diss. med. inaug. de scorbuto Dunamindano* (Leiden, 1705).

⁵⁰ Christian Ehrenfried Eschenbach, *Diss. inaug. de scorbutico, maris Balthici accolis non endemio*, praes. Christoph Martin Burchardi (Rostock, 1735).

that and worked later as a doctor in Tartu for a couple of years.⁵¹ Scurvy in Russia and the Baltic provinces is also discussed as a part of the problem in a dissertation, which dealt with the treatment of diseases, induced by climatic conditions, and was defended by Paul Curtius in 1735 in Halle. Scurvy was also discussed within the context of a thesis on healthy eating, defended by Nicolaus Himsel in Göttingen in 1751.

CHEMISTRY IN MEDICINE AND OTHER APPLICATIONS. Chemistry chairs were established at medical faculties as support disciplines since the seventeenth century for introducing to students the principles for making chemical pharmaceuticals and their salubrity. In the eighteenth century, as manufactures developed and there was a need to obtain more pure iron from metallurgical ores, chemistry suddenly found a practical application. It was given a place as a study discipline in new practical high schools, such as the Freiberg Mining Academy or Kaiserslautern. The chemistry professors of universities, first in Sweden and then in other European countries, Germany included, also started to consider such needs. Therefore, chairs of chemistry were transferred, step-by-step, from medical faculties to philosophy faculties, where they soon became the strongholds of research in natural sciences. In the eighteenth century, chemistry laboratories focused on studying gases, particularly oxygen.⁵²

The teaching of chemistry in universities, however, never broke relations with medicine. In the eighteenth century, the dominant chemical theory was the phlogiston theory, which was established by Georg Ernst Stahl. It stated that bodies that are flammable contain a special substance, phlogiston, which burns. Stahl's student Gottlob Johann Juncker, professor at Halle, promoted this theory very strongly and the teaching was widely spread all over Europe. However, by the second half of the eighteenth century, the most important gases present in air and water had been determined. This allowed A. L. Lavoisier to demonstrate that burning represents the amalgamation of some chemical element and oxygen.

Burning and the oxygen theory represented the invention of a new paradigm, which quickly started to find supporters, including scientists

⁵¹ *Allgemeines Schriftsteller- und Gelehrten-Lexikon der Provinzen Livland, Esthland und Kurland*, I, ed. by Johann Friedrich von Recke, Eduard Napiersky (Mitau, 1827), 522–523.

⁵² Christoph Meinel, "Reine und angewandte Chemie: die Entstehung einer neuen Wissenschaftskonzeption in der Chemie der Aufklärung", *Berichte zur Wissenschaftsgeschichte*, 8 (1985), 25–45; Christoph Meinel, "Artibus academicis inserenda: chemistry's place in eighteenth and early nineteenth century universities", *History of Universities*, VII (1988), 89–115.

from Jena and also Alexander Nicolaus Scherer and David Hieronymus Grindel from the University of Tartu that was re-established in 1802. Several medical doctors of the Baltic provinces and Courland defended their dissertations on the application of chemistry in medicine.

Four rather comprehensive dissertations focus on using chemistry in both medicine and other fields. One highly interesting dissertation, which was defended in Utrecht, is from Joachim Gebhard Himself (1701–51), the city physician of Riga. It discusses the use of chemistry in medicine, relying mostly upon the views of his teacher Hoffmann in Halle,⁵³ yet also including knowledge obtained from Boerhaave in Leiden.

Chemistry as an applied science is discussed by a province doctor of Tartu, Ludwig Cossart, who studied in the Medical College of Berlin. He defended a dissertation on the applications of chemistry in Livland as an extern in Königsberg.⁵⁴ He observes the examples of applied chemistry, such as lime burning or the distillation of spirits in country manors. Carl Fromhold Scheunevogel investigates the reasons for the volatility of some active ingredients of pharmaceuticals, being inspired by his teacher Johann Friedrich Cartheuserilt (1704–77), the professor of chemistry at the University of Frankfurt (Oder).⁵⁵ Carl Johann Nyberg studies carbon dioxide, discovered by Joseph Black in Edinburgh, and the possible applications of the gas in medicine.⁵⁶ Several dissertations discuss the indications and contra-indications of chemical pharmaceuticals for therapeutic purposes. In the eighteenth century, the practice of using mercury salts for treating syphilis and using salts of antimony to induce vomiting was common and acceptable. The dissertations of medical doctors of the Baltic provinces and Courland, which were defended in the 1780s, discuss the advantages and disadvantages of using mercury compounds (*mercurius phosporatu* and sublimed mercury) to treat sexually transmitted diseases and hypochondria. Carl Gotthelf Weitzenbreyer in Erfurt defended a dissertation on the use of copper in medicine.⁵⁷

⁵³ Joachim Gebhard Himself, *Diss. chemico-med. inaug. de necessitate chymiae ad stabiliendam rationalem theoriam medicam* (Utrecht, 1725).

⁵⁴ Ludwig Cossart, *Schediasma de eximiis in vita civili chemiae usibus, praesertim respectu livonica* (Königsberg, 1783).

⁵⁵ Carl Fromhold Scheunevogel, *Diss. chimica inaug. exhibens nonnulla de praecipua volatilitatis causa materiali* (Frankfurt-an-der-Oder, 1770).

⁵⁶ Carl Johann Nyberg, *Diss. inaug. med. de aeris fixi usu medico nuper celebrato* (Jena, 1783).

⁵⁷ Carl Gotthelf Weitzenbreyer, *Diss. inaug. med. de cupro medicato* (Erfurt, 1783)

PHARMACY. The use of pharmaceuticals was studied in a large number of paragraphs discussing therapy in dissertations on diseases. There were also some dissertations that focused on specific drugs. Several dissertations investigate drugs, which strengthen the body, such as *helenio et oenothera radex oenopoa* (the root of evening primrose) and catnip.⁵⁸ Medications that serve as subjects of dissertations were also *digitalis purpurea* (common foxglove), replacing the bark of quinquina for the bark of willow, using belladonna in the event of a dog bite and *nux vomica* (*Strychnos*, *Hippocastan*).⁵⁹ A critical study of the favourite pharmaceutical – opium, which was the focus of John Brown's theory and divided doctors into two camps, was defended in 1795 in Jena and stands out as quite remarkable.⁶⁰

There are a number of subjects that held a defined position in the medicine of the eighteenth century, but were never discussed or discussed only fleetingly in dissertations. Dissertations paid little attention to outbreaks of infectious diseases and none whatsoever to plague. Variolations of smallpox, which incurred enthusiasm in not just doctors but also some of the clergymen and landlords, are not discussed in dissertations at all. Medicine policy measures, which were introduced in several countries during the second half of the eighteenth century, were never a subject in dissertations. The issues of forensics are discussed as a part of surgical problems. Only a couple of dissertations discussed syphilis, and even then from the aspects of the efficiency of pharmaceuticals, which contain mercury, and their side-effects. And, nonetheless, the syphilis was widespread among all social classes of the Baltic provinces and Courland in the eighteenth century.

Also, dissertations do not touch upon on the expansion of popular education on health issues, which emerged next to the paternalist medical paradigm. A limited number of dissertations on physiology fail to spread any light on the discussion of ethics in medicine and testing on animals, including vivisection.

⁵⁸ Johann Burchart, *Diss. inaug. med. de quorundam roburantium praestantia* (Halle, 1772).

⁵⁹ Carl Christian Schiemann, *Diss. inaug. de digitali purpurea* (Göttingen, 1786); Christoph Carl Mayenberg, *Diss. inaug. med. de cortice salicis cortici peruviano substituendo* (Leipzig, 1772); Eberhard Mickwitz, *Diss. inaug. med. de usu belladonnae in morsu canis rabidi* (Jena, 1795); Anton Friedrich Cappel, *Diss. med. de nucis vomicae viribus et usu, praes. Ernst Anton Nicolai* (Jena, 1784).

⁶⁰ Ulrich Wilhelm Blaes, *Diss. inaug. de virtutibus opii medicinalibus secundum Brunonis systema dubiis et male fundatis* (Jena, 1795).

Medical literature used by doctoral students

In the eighteenth century, there was a huge increase in the number of materials printed in all the research fields, and medical literature was no exception.⁶¹ This was remarkable both in Latin, the research language of the day, but also in vernaculars: German, French, English, Italian, Dutch and Swedish. In such a plurality, the interested parties received help with orientation from reviews and annotations, which were published in abstract magazines of large academic institutions. The introductions of fresh academic literature were also published in special magazines that were established by many university professors. The translation of research literature into foreign languages boomed. For example, during the second half of the eighteenth century, a large number of works by English medics were translated into German. Reprints of materials of trendsetting authors were also issued, often as pirate copies.

From where did doctoral students get the books they needed for their work? Some of the literature, particularly textbooks and manuals, which were considered important to pass university courses, were purchased. It seems that the literature required to prepare a dissertation was obtained from the libraries of supervising or mentoring professors. Apparently, books were only occasionally borrowed from university libraries to write dissertations. This can be clearly observed in the case of the library of the University of Göttingen, which was one of the best-stocked university libraries in Germany in the eighteenth century. It turns out that the students from the Baltic provinces and Courland, even if many of them were diligent users of library services, never borrowed the library books that were listed under references in their dissertations. This can be deduced from the lack of records in library ledgers.⁶² The question, what was the circle of authors cited and listed under the references of dissertations, is of considerable importance for further investigation of the reception of medical ideas.

It is a real blessing that in the eighteenth century it became compulsory to include a list of references (in the seventeenth century this was not yet required). There were some authors who were cited often enough to

⁶¹ See Bernhard Fabian, "Im Mittelpunkt der Bücherwelt: über Gelehrsamkeit und gelehrtes Schrifttum um 1750", *Wissenschaften im Zeitalter der Aufklärung: aus Anlass des 250jährigen Bestehens des Verlages Vandenhoeck ja Ruprecht*, ed. by Rudolf Vierhaus (Göttingen, 1985), 249–274 (249–255).

⁶² Arvo Tering, "Baltische Studenten als Benutzer der Universitätsbibliothek Göttingen im 18. Jahrhundert", *Buch und Bildung im Baltikum. Festschrift für Paul Kaegbein zum 80. Geburtstag*, ed. by Heinrich Bosse, Otto-Heinrich Elias and Robert Schweitzer, Schriften der Baltischen Historischen Kommission, 13 (Münster, 2005), 153–190 (172).

reach beyond the limits of a certain specific subject. The 150 dissertations observed cited the works of more than five hundred authors. Here, we should highlight approximately one hundred authors, who were cited in at least three different dissertations. Half of the authors that were cited in dissertations defended in German universities were English and Scottish (14 authors), Dutch (12), French (10), Italian (6), Danish (1) and Swedish (1) medics, which shows that the authors representing the German-speaking (including Austria and Switzerland) language region were not dominant. This expresses the international nature of medical science.

What can be said about the circle of authors referred to in the dissertations? More than half (60.2%) (56 out of 93) of the authors cited in all the three dissertations are from the eighteenth century or, in other words, are contemporaries of the authors. About one third of the cited authors are from the seventeenth century (31.1%), (29 out of 93), while only five (5.4%) date back to the sixteenth century. In addition, the authors of the antiquity were also cited.

If we were to compare the origin of authors who are contemporaries of students to those who date back to the seventeenth century or earlier periods by countries, we will obtain a picture that is quite differentiated. While the number of German speaking authors among the cited authors as a whole was not dominant, as many as 64.3% of the eighteenth century authors spoke German. A large part among them were the professors of universities and high schools, some of whom were teachers of the students. French authors were cited most frequently among the foreign authors (8, 14.3%), followed by British (5, 8.9%) and Dutch (4, 7.4%) authors. There were also important authors from Italy and Sweden.

As for the cited authors of the seventeenth century German-speaking community, the proportion of those cited was less than half (43.1%), while the number of authors from the Netherlands totals to 27.6%. English, French and Italian authors held a strong position, but Danish and Swedish authors were also represented.

The pyramidal image gives a certain impression of the number of authors cited in the dissertations of doctors of the Baltic provinces and Courland. Approximately half a thousand authors, cited in at least one dissertation, form the foundation of the pyramid. They are followed by nearly one hundred (93) authors, who have been cited in at least three and then about 50 (52) of those, who were cited in at least five dissertations. As we approach the tip of the pyramid, the number of authors cited more frequently abruptly falls: 17 were cited in at least ten dissertations, 9 in fifteen

dissertations, 6 in twenty and only two authors are cited in more than 25 dissertations. The first position was held by Hermann Boerhaave (1668–1738), one of the leading figures of the iatrophysical trend,⁶³ who was cited in forty dissertations, and the second one was Friedrich Hoffmann (1660–1742), one of the most acknowledged medical researchers in Europe,⁶⁴ who was cited in 29 dissertations.

Table 3. Authors cited most often in dissertations of medical doctors, who practiced in the Baltic provinces and Courland in 1711–1810

Author	Number of dissertations, giving the reference
Hermann Boerhaave (1668–1738)	40
Friedrich Hoffmann (1660–1742)	29
Gerard van Swieten (1700–72) ⁶⁵	24
Fredrik Ruysch (1638–1731) ⁶⁶	22
Giovanni Batista Morgagni (1682–1771) ⁶⁷	22
Albrecht Haller (1708–77) ⁶⁸	21
Giorgio Baglivi (1668–1707) ⁶⁹	17
Lorenz Heister (1683–1758) ⁷⁰	17
Thomas Willis (1622–75) ⁷¹	15

⁶³ About Boerhaave see Lindeboom, *Hermann Boerhaave*; Lindeboom, “Boerhaave’s Einfluss in den deutschen Staaten”, *Deutsch-niederländische Beziehungen in der Medizin des 18. Jahrhunderts. Vorträge des deutsch-niederländischen Medizinhistorikertreffens 1982*, ed. by R. Toellner and M. I. van Lieburg (Amsterdam, 1985), 30–41.

⁶⁴ About Hoffmann see Ingo Wilhelm Müller, *Iatromechanische Theorie und ärztliche Praxis im Vergleich zur galenistischen Medizin* (Friedrich Hoffmann, Pieter van Foreest, Jan van Heurne) (Stuttgart, 1991).

⁶⁵ For Van Swieten see Christian Probst, *Der Weg des ärztlichen Erkennens am Krankenbett: Hermann Boerhaave und die ältere Wiener medizinische Schule, 1 (1701–1787)* (Wiesbaden, 1972).

⁶⁶ For Ruysch see *Enzoklopädie Medizingeschichte*, ed. by Werner E. Gerabek, Bernhard D. Haage, Gundolf Keil and Wolfgang Wegner (Berlin, New York, 2007), 1276–1277.

⁶⁷ For Morgagni, see *Enzoklopädie Medizingeschichte*, 1007–1008.

⁶⁸ For Haller, see *ibid.*, 528–529.

⁶⁹ For Baglivi, see *ibid.*, 131–132.

⁷⁰ For Heister, see T. de Moulin, “Lorenz Heister (1683–1758): Vermittler zwischen der deutschen und niederländischen Chirurgie”, *Deutsch-niederländische Beziehungen in der Medizin des 18. Jahrhunderts. Vorträge des deutsch-niederländischen Medizinhistorikertreffens 1982*, ed. by R. Toellner and M. I. van Lieburg (Amsterdam, 1985), 53–64.

⁷¹ About Willis see Hansruedi Isler, *Thomas Willis: ein Wegbereiter der modernen Medizin 1621–1675* (Stuttgart, 1965).

Author	Number of dissertations, giving the reference
Marcello Malpighi (1628–94)	14
Karl Linné (1707–78)	13
John Huxham (1694–1768)	12
William Cullen (1712–90)	11
Christian Gottlieb Ludwig (1709–73)	11
Thomas Sydenham (1624–89)	11
Francois Boissier de Sauvages (1706–67)	10
Anton de Haen (1704–76); Johann Juncker (1679–1759); Alexander and Donald Monro; Johan Baptist Helmont (1577–1644); Pieter Forest (1521–97)	9
Christian Gottlieb Selle (1748–1800); David Hieronymus Gaub (1704–80); Maximilian Stoll (1742–87); Guillaume Mauquest de la Motte (1655–1737); Theopile Bonet (1620–89); Nicolaas Tulp (1593–1678); Jodocus Lommius (†1564); Rudolph Augustin Vogel (1724–74); Johann Zacharias Platner (1694–1747)	8
Theodor Kerckring (1638–93); Jacque-Benigne Winslow (1669–1760); Georg Erhard Hamberger (1697–1755); August Gottlieb Richter (1742–1812); Fabritius Hildanus (1560–1634); Johann Nicolaus Pechlin (1644–1706)	7
Bernhard Siegfried Albinus (1697–1770); Giovanni Maria Lancisi (1654–1720); Francois Mauriceau (1637–1709); Ernst Anton Nicolai (1722–1802); John Pringle (1707–82); Johan Leberecht Schmucker (1712–86); Raymond Vieussens (1641–1717); Georg Ernst Stahl (1659–1734)	6
Giovanni Alfonso Borelli (1608–79); Johann Friedrich Cartheuser (1704–77); Johann Theodor Eller (1689–1760); Johannes de Gorter (1689–1762); Antoni van Leeuwenhoek (1632–1723); Johann Jakob Plenck (1738–1807); Johann Heinrich Schultze (1687–1744); Jean Riolan (1580–1657).	5

We see that the most frequently cited authors (51) represent a truly international group and each and every one of them has contributed significantly to the development of medical sciences. Every seventeenth-century author has influenced the rapid development of physiology back then, while eighteenth century authors have contributed to medical sciences as systemizers.

Many authors cited in the dissertations are represented with several works. In many cases, the exact number of citations cannot be established, as reference is often given to the authors without indicating the work concerned. Therefore, in the case of frequently cited authors – for example,

Malpighi or Gaub – one can assume the use of a certain material, but as the title is not given, the issue is left open.

The works of the most frequently cited medic, Hermann Boerhaave, have been used in the dissertations of doctors of the Baltic provinces and Courland, which were defended, above all, in Halle, Königsberg and Göttingen.⁷² Four students defended their respective dissertations in Leiden during Boerhaave's lifetime, and three of them cited Boerhaave's works. Only two of the dissertations (out of six) that were defended in Leiden by medical doctors in the Baltic provinces and Courland after the death of Boerhaave, cite him. The frequent citation of Boerhaave in the dissertations correlates with the role of Boerhaave as *praeceptor Europae* in the medical history of the eighteenth century.

Boerhaave enchanted his students with both the theoretical iatrophysical concept and practical training at bedside. Students of Boerhaave worked as professors in many European universities. One of his students, Albrecht Haller, laid down the foundation for the development of medical faculty of the new University of Göttingen, established in 1737, while van Swieten and de Haen thoroughly reformed the organization of medicine in Austria and established first-class clinical teaching system in Vienna. They all took care of distributing Boerhaave's scientific legacy in Europe.

Boerhaave's own main works include *Institutiones medicae* (1708) and *Aphorisms on recognition and treatment of diseases* (1709), which was intended to serve as a practical supplement to the first book. These textbooks were soon accepted abroad – the pirate copies were published in England, France, Italy and Germany. Seven prints were made of the first textbook, while the second one was reprinted eight times.⁷³ Considering such a good availability of both of these books one should not be surprised, that *Institutiones medicae* was cited in eight and *Aphorisms* in nine dissertations. Also in Halle, the collection of Boerhaave's aphorisms had been made available: it was published by Professor Johann Heinrich Schulze in 1739⁷⁴ and this was used very widely in Germany in the 1740s and 1750s.⁷⁵

⁷² Before 1780, Boerhaave's works were cited 6 times in Leiden and 6 times in Halle in the dissertations by Baltic students, and after 1780 3 times in Königsberg and 4 times in Göttingen.

⁷³ Lindeboom, "Boerhaave's Einfluss in den deutschen Staaten", 32.

⁷⁴ *Aphorismi de cognoscendis et curandis morbis in usum doctrinae domesticae digesti ab Hermanno Boerhaave. Ejusdem Libellus de materia medica et remediorum formulis ad singulos aphorismos digestus* (Halle, 1739).

⁷⁵ Marius J. van Lieburg, "Die Aphorismen von Hermann Boerhaave (1668-1738) und die Schulzesche Edition von 1739", *Johann Heinrich Schulze (1687-1744) und seine Zeit: Hallesches Symposium 1987*, ed. by Wolfram Kaiser and Arina Völker, Wissenschaft-

Boerhaave's manual on chemistry, *Elementa chemiae* (1732), was very popular in educational establishments all over Europe and many reprints were made of the material.⁷⁶ This textbook was also cited very often in dissertations of medical doctors of the Baltic provinces and Courland: it was cited in eight works. Albrecht Haller published texts of Boerhaave's lectures in Göttingen.⁷⁷ It's quite possible that these lectures laid down the foundation for medical lectures given in many German educational establishments. Reference was given to the lecture materials, published by Haller, in five dissertations of medical doctors of the Baltic provinces and Courland. Boerhaave's increased influence in the German speaking community got a synergic impulse from another outstanding student of Boerhaave – the reorganizer of the Austrian medical system, Gerhard van Swieten, who published five volumes of substantial comments to Boerhaave's aphorisms, *Commentaria in Hermani Boerhaave aphorismos de cognoscendis et curandis morbis*.

It is possible that Boerhaave is the most frequently cited author in the medical dissertations defended in the eighteenth century in the German-speaking medical community. Such an assumption is supported by the fact that Boerhaave's works were repeatedly reprinted and these were used as the basic material of many lectures given in universities. Boerhaave's influence was definitely large in those campuses that were the main places for studying and the promotion of medics of the Baltic provinces and Courland. For example, many medical professors of Halle gave lectures, based on Boerhaave's works, for more than half a century.⁷⁸ Also in Jena, many professors gave physiology, pathology and therapy lectures based on Boerhaave's textbook from the 1740s to the 1760s.⁷⁹ Boerhaave's *Institutiones* also served as the basis of lectures, over a number of years, in the University of Königsberg.⁸⁰

liche Beiträge der Martin-Luther-Universität Halle-Wittenberg 1988/40 (T 68) (Halle, 1988), 156–163.

⁷⁶ Lindeboom, *Herman Boerhaave*, 121.

⁷⁷ *Hermani Boerhaave praelectiones academicae in proprias institutiones rei medicae 1741*, Edditi et notas additit Albertus Haller, vols. 1–6 (Göttingen, 1739–45).

⁷⁸ Wolfram Kaiser and Heinz Krosch, "Leiden und Halle als medizinische Zentren des frühen 18. Jahrhunderts. Zum 300. Geburtstag von Hermann Boerhaave (1668–1738)", *Zeitschrift für die gesamte innere Medizin und ihre Grenzgebiete*, 23 (1968), 330–338 (334–336).

⁷⁹ *Das Vorlesungsangebot an der Universität Jena von 1749 bis 1854*, ed. by Horst Neuper and Katarina Kühn and Matthias Müller (Weimar, 2003), 1, 4, 7, 17, 24, 29, 34, 37, 41, 43, 46, 62.

⁸⁰ *Vorlesungsverzeichnisse der Universität Königsberg (1720–1804)*, ed. by Michael Oberhausen und Riccardo Pozzo (Stuttgart, Bad Cannstatt, 1999), 28–540 (Register).

The works of authors who had influenced the views of Boerhaave and the works of his own students were also cited very frequently in the dissertations of the medical doctors of the Baltic provinces and Courland. Let us mention Thomas Sydenham, who was a huge example for Boerhaave, or the works of Amsterdam medic, Fredrik Ruysch, with whom he was on friendly terms. The same goes in Germany for the works of Albrecht Haller in Göttingen, Lorenz Heister in Helmstedt and Johann Zacharias Platner in Leipzig; in Austria, Gerard van Swieten and Anton de Haen; in the Netherlands and Russia Johannes de Gorter; and John Pringle, who practiced in England. It should be emphasized here that the frequently cited Swedish scholar, Carl Linné, jump-started his career largely due to the supportive attitude of Boerhaave. This means that the influence of Boerhaave's students and successors in shaping the scientific luggage of doctors, who practiced in the Baltic provinces and Courland in the eighteenth century, was remarkable.

The central issue of many dissertations was pathology as well as the reasons, diagnostics or treatment of internal diseases. Apart from Boerhaave, another important authority in this sphere in the German-speaking community was Friedrich Hoffmann, professor of medicine of Halle, whose most important work, *Medicina rationalis systematica* (1718–40), was cited in at least fifteen dissertations of medical doctors in the Baltic provinces and Courland.

It is rather surprising that reference given to the works of Hoffmann's antipode, Georg Ernst Stahl, and after he left for Berlin in 1716, those of his followers, Michael Albert and Johann Juncker, who continued with his trends in Halle, is much less frequent than to the works of the representatives of Hoffmann's school. Furthermore, while the works of the Montpellier professor Francois Boissier de Sauvages, who continued to develop the theories of Stahl, were rather frequently cited in the dissertations of medical doctors of the Baltic provinces and Courland, no reference at all was given to the works of Theophile de Bordeu (1722–76) and Paul Joseph Barthez (1734–1806), who continued to develop his ideas. Also, no reference was given to the works of an English follower of Stahl, Richard Mead. This reflects the fact that the reception of Stahl's ideas in Germany, compared to France, where a whole school of Stahl's followers emerged, remained quite modest.⁸¹

Academicae praelectiones de cognoscendis et curandis praecipuis corporis humani affectibus (1772) by Rudolf Augustin Vogel, professor at Göttingen,

⁸¹ Karl Roths Schuh, *Konzepte der Medizin in Vergangenheit und Gegenwart* (Stuttgart, 1978), 303.

was used in five dissertations. *Handbuch der praktischen Arzneiwissenschaft* (1781) by his son Samuel Gottlieb Vogel, medical doctor at Göttingen and the promoter of seawater bathing, was used in four dissertations. In as many dissertations, reference was given to Johann Theodor Eller, professor at *collegium medico-chirurgicum* of Berlin, and his main work, *Observationes de cognoscendis et curandis praesertim morbis acutis*, and to *Avis au peuple sur sa santé* (1761) by Swiss medic Samuel Auguste David Tissot. A work by John Huxham, discussing relations between the physical environment and medicine, *Opera physico-medica* was used in at least six dissertations. Many students from Courland went to William Cullen, a professor in Edinburgh, who was a charismatic medical theorist during the second half of the eighteenth century. Four of his eleven works, cited in different dissertations, were translated into German as *Anfangsgründe der praktischen Arzneikunst*.

Surgical handbooks were cited very often. Surgical manual *Institutiones chirurgiae* (1718) by Helmstedt professor Lorenz Heister, one of the founders of modern scientific surgery, who had studied in Leiden and Amsterdam, was cited in no less than ten dissertations of medical doctors of the Baltic provinces and Courland. This book, which was used for a very long time in Europe, is considered to be the first complete and systematic, anatomy-based surgical manual of the modern era. Obstetrics and eye surgery students were also very fond of this book.⁸² The main work of a Leipzig professor, Johann Zacharias Platner's *Institutiones chirurgiae rationalis* (1745), which was reprinted several times, was cited in six dissertations. Professor of surgery of Göttingen University, August Gottlieb Richter, who was considered as one of the most outstanding German surgeon of the second half of the eighteenth century, tried to merge surgery and the study of internal diseases.⁸³ His seven volume *Anfangsgründe der Wundarzneykunst*, which was widely spread since 1782, was cited in four dissertations, just like the first surgical magazine, which Richter published (*Chirurgische Bibliothek*, 1771–97, 15 volumes). Six dissertations included reference to the work of a chief surgeon of British army, John Pringle, who took part in the Seven Years' War. The work was highly important for the modernization of military medicine and the training of army surgeons. It was published in 1752 and became available in 1754 to German readers as *Beobachtungen über die Krankheiten einer Armee* (1754). *Vermischte chirurgische Schriften*, a surgical handbook by the Chief Surgeon of the Prussian Army Johann Leberecht Schmucker, who took part in the Seven Years' War, was cited in four dissertations. As

⁸² De Moulin, "Lorenz Heister", 61.

⁸³ See Karl Sudhoff, *Kurzes Handbuch der Geschichte der Medizin* (Berlin, 1922), 321.

expected, dissertations often cite manuals or medical records, which summarize practical clinical experiences. The annual reports of a doctor of the Vienna Clinic, Anton de Haen's 15-volume *Ratio medendi in nosocomio pratico Vindobonensi*, which were published in 1758–79 and include a rich number of various cases, provided examples of pathology to many writers of dissertations.⁸⁴ Nine dissertations included reference to these annual reports.

Christian Gottlieb Selle, a doctor of Berlin Charité Clinic, concentrated his practical experiences into a handbook, *Medicina clinica oder Handbuch der medicinischen Praxis*. Reference was given eight times to the definition of a fever, *Rudimenta Pyretologiae methodicae*, which was provided by this manual and widely known in Europe. The manual was reprinted eight times from 1781–1801 and cited in four dissertations of medical doctors of the Baltic provinces and Courland.⁸⁵ A large number of dissertations studied obstetrics pathology. This is why the dissertations cite many authors, who have discussed obstetrics, including the excellent works of Georg Wilhelm Stein and Francois Mauriceau, but in no more than three dissertations each. At least four dissertations cited the works of the obstetrics theorist, Guillaume Mauquest de la Motte, *Traité complet des accouchemens*.

No substantial developments took place in standard anatomy in the eighteenth century. However, a number of medics attempted to prepare anatomy textbooks with a structure as user-friendly as possible. *Compendium anatomicum* (1717) by Lorenz Heister pushed out Philipp Verheyenäs anatomy textbook, which was popular in the Netherlands and Germany, and became the most popular anatomy textbook in the universities of Western Europe.⁸⁶ This was cited in at least five dissertations of medical doctors of the Baltic provinces and Courland. As for the works of a professor of School of Obstetrics and of Botanical Gardens of Amsterdam, Frederik Ruysch, who became famous by injecting colorants in anatomical and physiological studies, *Observationum anatomico-chirurgicarum centuria* (1691), was cited most often, in nine dissertations, while *Epistolae anatomicae problematicae* (14 volumes, 1696–1701) was cited in six dissertations. The most important work of a Parisian medic of Danish origin, Winslow, *Exposition anatomique de la structure du corps humain* 1732, was cited in at least four dissertations. It was made available to German readers by publication in Leipzig in 1764.

⁸⁴ Sudhoff, *Kurzes Handbuch*, 313.

⁸⁵ On this subject, see Paul Diepgen, Edith Heischkel, *Die Medizin an der Berliner Charite bis zur Gründung der Universität* (Berlin, 1935).

⁸⁶ *Ibid.*

As for the authors of the sixteenth and seventeenth centuries, the works of authors who have become classics of medical sciences with their discoveries in the field of chemistry and physiology, the works of Malpighi, Baglivi and Borelli from Italy, Bartholinus from Denmark, Boyle from England and van Helmont and Leeuwenhoek from the Netherlands were used most often. The works of practicing doctors, supported by Hippocratic empirical approach, where the observations and medical records/case histories provided valuable information, were highly valued. Such authors were the English Willis and Sydenham, the French Vieussens and Riolan, the Dutch Foreest, Lommius, Ruysch, Kerckring and Tulpius, the Swiss Bonetus, and the German Hildanus and Pechlin.

The fact that the works of German authors dominate the references of at least three dissertations of medical doctors of the Baltic provinces and Courland can be explained with the fact that most of the cited authors were the tutors and teachers of students. They could have easily suggested the topics of their dissertations and often they had studied these topics themselves. Even the literature, used in the thesis, came rather from the private library of the supervisor than from a university library. So in Halle, the works of Friedrich Hoffmann, Johann Juncker, Georg Ernst Stahl, Michael Albert and Andreas Elias Büchner, in Göttingen Rudolf Augustin Vogel, in Jena Ernst Anton Nicola, Georg Erhard Hamberger and Christoph Wilhelm Hufeland were cited as the works of tutors. Considering such a background, it is quite surprising that the works of Justus Christian Loder or Johan Friedrich Blumenbach⁸⁷ were hardly used.

Thanks to clinical practice, pathological anatomy represented a breakthrough and soon became a trendsetter. The founder of this field Giovanni Battista Morgagni, professor of Padua University, started to publish his *Adversaria anatomica* in 1706 and continued from 1717–19. This book was cited in seven dissertations of medical doctors of the Baltic provinces and Courland, while his main work, *De sedibus et causis morborum*, which was published in 1761 as 70 letters, was cited in at least 12 dissertations.⁸⁸

⁸⁷ As an exception, Johann Wilhelm Ludwig Luce (1750–1842), who worked as a private teacher and a clergyman in Saaremaa (Ösel) and travelled to Göttingen to study medicine when he had reached middle age and published a book there in 1794: *Über die Ursachen der Degeneration der organischen Körper*, relied upon the works of Blumenbach. The subject of his dissertation, which he defended in Erfurt, is not known. It is possible that Luce used the paper in German, which was based on the views of Blumenbach, to defend his thesis instead of dissertation.

⁸⁸ For Morgagni, see *Enzyklopädie Medizingeschichte*, 1007–1008.

Conclusions

From 1711–1810, at least 215 educated medics were practicing in the Russian Baltic provinces and the Grand Duchy of Courland. According to the information available, 176 of them were medical doctors. Halle, Jena, Göttingen and Königsberg were the most important promotion places among approximately twenty universities, but Leiden and Erfurt were also important. As the number of educated doctors increased sharply in the Baltic provinces and Courland during the last two decades of the eighteenth century, the largest number of doctoral promotions occur in that period. During the eighteenth century as a whole, the largest number of dissertations was defended in the University of Jena. Until 1770, the University of Halle was the most attractive institution for doctoral promotion, followed by the universities of Leiden and Jena (from the middle of the century), and the universities of Jena and Göttingen during the last two decades.

150 doctoral and exercise dissertations, which were provisionally examined in the article, are valuable sources for studying the history of ideas and not just of the Baltic provinces and Courland. As the dissertations of the medical doctors of the Baltic provinces and Courland, which were defended from 1780–90s in Jena and Göttingen, form as much as 8–10% of medical dissertation output of these universities, it could represent a cross-sectional sample for researchers who are studying the dissertations of Jena and Göttingen.

The dissertations mostly focused on different diseases and their treatment, pharmaceuticals and their use. Focus was also given to the issues of hygiene and healthy lifestyle as well as the applications of chemistry in medical science and other fields. It is quite surprising that more than a tenth of the defended dissertations discussed the issues of obstetrics and midwifery, particularly obstetric pathologies. As expected, dissertations studying this topic were defended in Göttingen, but quite surprisingly, this subject was not considered attractive in Jena, although the director clinic of obstetrics there was Christian Justus Loder from Livland. On the other hand, in Halle, where there was no obstetrical clinic, a considerable number of doctors of the Baltic provinces and Courland defended their dissertation on this topic. Although at this time, obstetrics was the exclusive speciality of midwives, doctors with competence sufficient to advise in pathological cases of labour, which require immediate interference, complemented the rows of educated medics of the Baltic provinces and Courland since the second half of the eighteenth century.

Dissertations cited the works of approximately half thousand authors. The circle of most frequently cited authors was truly international. Among the authors were Dutch, Italian, English, Scottish, French and Swedish medical theorists, apart from Germans. The most frequently cited authors were the leading figures of the iatrophysical school Hermann Boerhaave and Friedrich Hoffmann. The high incidence of reference to Boerhaave is not surprising, as his textbooks were published in many European countries, including Germany. His textbooks and lecture materials, published by his students, were the foundation for lectures in many universities. Reference was also frequently given to medics, which set an example for Boerhaave himself, as well as his own students and followers. The works of Friedrich Hoffmann and his students, who represent the same iatromechanic school as Boerhaave, were also cited quite frequently, while from the psychodynamic school of Georg Ernst Stahl and his followers, only the works of Sauvages and Juncker were cited.

Speaking of Boerhaave's textbooks, both *Institutiones medicae* and *Aphorisms*, which was intended to be the practical supplement of the latter, and *Elementa chemiae* are cited most often. The most frequently cited source in general where the comments of the Austrian reformer of medicine, Gerard van Swieten, to the aphorisms of his teacher, Boerhaave. The most important work of Giovanni Batista Morgagni, the founder of pathological anatomy, *De sedibus et causis morborum*, was also often cited, and the same goes for *Observationum anatomico-chirurgicarum centuria* by Ruysch. The annual reports of a doctor of the Vienna Clinic, Anton de Haen, *Ratio medendi in nosocomio practico Vindobonensi*, were also quite popular, as these included a rich number of various cases. Among the most frequently cited works were also *Medicina rationalis systematica* by Hoffmann and *Conspectus* of his antipode, Johann Juncker, and *Nosologia methodica sistens morborum classes* by his colleague, Francois Boissier de Sauvages.

Finally, it should be said that in the eighteenth century, the introduction of clinical practice into the academic medical science taught in Germany universities in the eighteenth century was one of the most important innovations. This innovation played an important role for the universities, where the future medical doctors of the Baltic provinces and Courland studied (Halle, Göttingen, Jena, Strasbourg). But this is a subject for another article.

ARVO TERING (b. 1949) is a Senior Researcher at the Tartu University Library.

KOKKUVÕTE: Eesti-, Liivi- ja Kuramaal tegutsenud meedikute Euroopa ülikoolides kaitstud dissertatsioonid 18. sajandil

Vene Läänemereprovintides ning Kuramaa hertsogiriigis tegutses ajavahemikus 1711–1810 Baltimail vähemalt 215 õpetatud meedikut. Teadaolevalt on neist 176 olid meditsiinidoktorid. Promoveerumiskohtadeks olnud ligi paarikümnest ülikoolist olid kõige olulisemad Halle, Jena, Göttingen ja Königsberg, kuid atraktiivsed olid ka Leiden ja Erfurt. Kuna 18. sajandi kahel viimasel aastakümnel kasvas Baltimail järsult õpetatud meedikute arv, siis doktoripromotsioonide statistika suurimad arvud jäävad just sellesse aega. Kogu 18. sajandi vältel tervikuna kaitsti kõige enam doktoritöid Jena ülikoolis. Kuni 1770. aastateni oli kõige atraktiivsemaks promoveerumiskohaks Halle ülikool, millele järgnevad Leiden ja Jena (sajandi keskpaigast) ning kahel viimasel aastakümnel Jena ja Göttingeni ülikoolid.

De visu esialgselt läbi töötatud 150 doktori- ja harjutusdissertatsiooni teeniksid väärtusliku allikatena mitte ainult Baltimaade ideeajaloo uurimist. Kuna Baltimaade arstide 1780.–90. aastatel Jenas ja Göttingenis kaitstud meditsiinalased doktoritööd moodustavad tervelt 8–10 protsenti nende ülikoolide meditsiinalasest dissertatsioonitoodangust, võiks see olla Jena ja Göttingeni dissertatsioonide uurijatele provisoorseks läbilõikevalimiks.

Väitekirjade peamisteks teemadeks olid eri haigused ja nende ravi, ravimid ja nende kasutamine. Raskuskeskmesse tõusid ka hügieeni ja tervislike eluviiside teema, samuti keemia kasutamine arstiteaduses ning muudes valdkondades. Üllatuslik on aga see, et enam kui kümnendik kaitstud doktoritöödest käsitles sünnitusabi, eelkõige raseduspatoloogia probleeme. Ootuspärane on, et sel teemal kaitsti doktoritöid Göttingenis, kuid üllatuslikult ei peetud seda teemat atraktiivseks Jenas, kuigi seal oli sünnitusabi kliiniku direktoriks Liivimaalt pärit Christian Justus Loder. Seevastu Halles, kus sünnitusabikliinik puudus, oli sel teemal oma doktoritöö kaitanud terve rida Baltimaade arste. Kuigi sünnitusabi kuulus tollal Baltimail eranditult vaid ämmaemandate pädevusse, oli sel teemal doktoritöö kaitsnute näol alates 18. sajandi teisest poolest Baltimaade õpetatud meedikute hulka ilmunud kiiret tegutsemist nõudvateks sünnituspatoloogilisteks juhtudeks nõustamiskompetentsi omavad arstid.

Dissertatsioonides viidati umbes pooltuhande autori töödele. Enimviidatud autorite ring oli tõeliselt rahvusvaheline. Baltimaade meedikute dissertatsioonides kümne enimviidatud autori hulka kuulusid peale sakslaste hollandi, itaalia, inglise, šoti, prantsuse ning rootsi meditsiiniteoreetikud, neist kõige arvukamalt viidati iatrofüüsikalise suuna esifiguure

Hermann Boerhaavet ning Friedrich Hoffmanni. Boerhaave kõrge viidatavus oli ootuspärane, sest tema õpikute trükke ilmus mitmes Euroopa riigis, sealhulgas Saksamaal, rohkesti, samuti olid tema õpikud ja õpilaste välja antud loengutekstid kasutusel paljudes ülikoolides loengute alusena. Rohkesti viidati ka Boerhaave enda eeskujuks olnud meedikute ning tema õpilaste ja järgijate töödele. Samuti olid väga viidatavad Boerhaavega sama iatromehhaanilist suunda esindava Friedrich Hoffmanni ja tema õpilaste tööd, seevastu psühhodünaamilise suuna juhi Georg Ernst Stahli järgijatest oli palju viidatavad vaid Sauvages'i ja Junckeri tööd.

Boerhaave õpikutest olid palju viidatud nii *Institutiones medicae* kui selle praktiliseks täienduseks mõeldud *Aforismid*, samuti *Elementa chemiae*. Kõige viidatumaks teoseks üldse osutusid Austria meditsiinireformija Gerard van Swieteni kommentaarid oma õpetaja Boerhaave aforismidele. Väga viidatav oli patoloogilise anatoomia rajaja Giovanni Batista Morgagni peateos *De sedibus et causis morborum*, samuti Ruyschi *Observationum anatomico-chirurgicarum centuria*. Mõistagi olid populaarsed Viini kliinikuarsti Anton de Haeni igal aastal välja antavad haiguslugude näiteid sisaldavad kliiniku aastaaruanded *Ratio medendi in nosocomio practico Vindobonensi*. Viidatumate hulgas olid ka Hoffmanni *Medicina rationalis systematica* ja tema antipoodi Johann Junckeri *Conspectus*-pealkirjaosaga algavad tööd, samuti tema prantsuse kolleegi Francois Boissier de Sauvages'i *Nosologia methodica sistens morborum classes*.