

Chapter 5

Adolf Mühry (1810–1888): Göttingen’s Humboldtian Medical Geographer

NICOLAAS A RUPKE

Who was Mühry?

When in 1857 the *British and Foreign Medico-Chirurgical Review* “endeavoured to give an exposition generally of the principles of Medical Geography”, it discussed Adolf Mühry’s *Die geographischen Verhältnisse der Krankheiten oder Grundzüge der Noso-Geographie* (The Geographical Relations of Diseases or, Outlines of Noso-Geography) (1856).¹ When in 1869 the Parisian physician Edouard Carrière (d. 1883), in his programmatic booklet *Fondements et organisation de la climatologie médicale* (Foundations and Organization of Medical Climatology) proposed the establishment of an international society for medical climatology, he accorded the right of priority for founding such a society to Germany, because of three of its native sons: Alexander von Humboldt (1769–1859), Heinrich Berghaus (1797–1884) and Adolf Mühry.² And when in 1892 the third edition of Berghaus’s *Physikalischer Atlas* appeared, it singled out Friedrich Schnurrer (1784–1833) and Mühry as sources for its updated map of the global distribution of human diseases.³ Alexander von Humboldt was and is widely known; Berghaus and Schnurrer are discussed elsewhere in this volume (Chapters 10 and 11); but who was Mühry? For all his nineteenth-century prominence as a medical geographer, today he is an obscure figure, rarely ever referred to.⁴

In this chapter I introduce Mühry by providing a brief exposition of his medical geography in the context of his life and times. He is interpreted as the most significant medical geographer in the Humboldtian tradition of the mid-nineteenth century, and

Nicolaas A Rupke, Institut für Wissenschaftsgeschichte, Georg-August-Universität, Humboldtallee 11, D-37073 Göttingen, Germany.

¹ Anon., ‘The geography of disease’, *British and Foreign Medico-Chirurgical Review*, 1857, 19: 312–22. Together with Mühry’s book, the reviewer discussed an article ‘On the geographical distribution of health and disease’, by Alexander Keith Johnston, the geographer-in-ordinary to the Queen.

² E Carrière, *Fondements et organisation de la climatologie médicale*, Paris, Baillière, 1869, p. 77.

³ *Berghaus’ Physikalischer Atlas*, Gotha, Justus Perthes, 1892, part 7, p. 4. This part of the revised Berghaus atlas was written by the Strassburg professor of geography Georg Gerland (1833–1919).

⁴ One of the rare references to Mühry is by F Barrett, ‘Medical geography as a foster child’, in M S Meade (ed.), *Conceptual and Methodological Issues in Medical Geography*, Chapel Hill, University of North Carolina, 1980, pp. 1–15, on 8–11. See also Chapter 6 in this volume.

as a characteristic representative of what elsewhere I have called “Humboldtian medicine”.⁵

Adolf Adalbert Johannes Just Conrad Mühry was born 4 September 1810 into a Hanover medical family. His father, Georg Friedrich Mühry (1774–1848), was a respected physician who became, among other things, Hanoverian “Hofmedicus” (court physician). Adolf had an older brother, Karl (1806–1840), a physician who like his father was appointed “Hofmedicus” to the Hanoverians. Following in his father’s and brother’s footsteps, Adolf studied medicine in Göttingen (1829–1833), writing a doctoral dissertation on malignant fungal parasites inside the eye, ‘Ad parasitorum malignorum imprimis ad fungi medullaris oculi historiam symbolae aliquot’. In 1835, he toured France, England and Germany and wrote an interesting comparative account of the state of medicine in these parts of Europe: *Darstellungen und Ansichten zur Vergleichung der Medicin in Frankreich, England und Deutschland* (Accounts and Views Comparing Medicine in France, England and Germany) (1836). Mühry then was appointed “Assistenzwundarzt” (assistant surgeon) with the royal regiment in Hanover (1837–1838) and with the city of Hanover (1838–1844). In 1844 his book *Über die historische Unwandelbarkeit der Natur und der Krankheiten* (On the Historical Unchangeability of Nature and of Diseases) was published. From 1840 till 1848, Mühry was a lecturer in pathology at the Hanover School of Surgery. In 1848, too, he was awarded the title “Sanitätsrath” which he later gave up. Following the Revolution of 1848 and the death of his father earlier that year, Mühry’s circumstances changed. From 1849 till 1853, he set up in private medical practice in Hanover, but then moved to Göttingen, where from 1854 till the year of his death he lived as “Privatgelehrter”.⁶

Over a period of fifty years, Mühry wrote many books and articles, starting with his doctoral thesis of 1833 and ending with a paper in 1883 on oceanic currents in the South Atlantic.⁷ Initially, following his student days and during his Hanover period, Mühry’s interest was centred on pathology; on his return to Göttingen, he combined this interest with geography to produce his contributions in the field of medical geography; afterwards, through the 1860s and 1870s, he increasingly turned to meteorology and climatology, publishing a large number of papers in Petermann’s *Geographische Mitteilungen*.⁸ His last book concerned the philosophy of science, *Kritik und kurze Darlegung der exacten Natur-Philosophie* (Critique and Brief Exposition of the Exact Philosophy of Nature) (1882). As Mühry indicated in a concise autobiography of 1878, he saw his own scholarly significance in his contributions to

⁵ N A Rupke, ‘Humboldtian medicine’, *Medical History*, 1996, 40: 293–310.

⁶ For Mühry’s biographical details, see N Theus, ‘Adolf Adalbert Mühry (1810–1888). Leben und Werk des Göttinger Arztes unter besonderer Berücksichtigung der medizinischen Geographie’, doctoral thesis, Göttingen, 1997.

⁷ A Mühry, ‘Kurze Bemerkung über das System der Meeresströmungen im Südatlantischen Ozean’, *Petermanns Geographische Mitteilungen*, 1883: 384–85.

⁸ Among Mühry’s books on climatology were *Klimatologische Übersicht der Erde in einer Sammlung authentischer Berichte*, Leipzig and Heidelberg, C F Winter, 1862; *Beiträge zur Geo-Physik und Klimatographie*, Leipzig and Heidelberg, C F Winter, 1863; *Über die Lehre von den Meeresströmungen*, Göttingen, Vandenhoeck und Ruprecht, 1869; *Untersuchungen über die Theorie und das allgemeine geographische System der Winde*, Göttingen, Vandenhoeck und Ruprecht, 1869.

physical geography, especially the ones that concerned the delineation of the large-scale patterns of rainfall, wind, and oceanic currents.⁹

Mühry's involvement in medical geography took place during, and was limited to, the 1850s. He produced a trilogy on the subject, of which the first and most important was the already cited *Die geographischen Verhältnisse der Krankheiten* (referred to below by the second half of the title: *Grundzüge der Noso-Geographie*). The other two were entitled *Klimatologische Untersuchungen oder Grundzüge der Klimatologie in ihrer Beziehung auf die Gesundheitsverhältnisse der Bevölkerungen* (Climatological Investigations or Elements of Climatology in its Connection with the Medical Conditions of Peoples) (1858); and *Allgemeine geographische Meteorologie oder Versuch einer übersichtlichen Darlegung des Systems der Erd-Meteoration in ihrer klimatischen Bedeutung* (General Geographical Meteorology or Attempt at a Clear Exposition of the System of Earth-Meteoration in its Climatological Significance) (1860).

Against Historical Pathology

Johanna Bleker has drawn attention to the fact that, during the early part of the nineteenth century, many German doctors were drawn to the medical historicism of historical pathology.¹⁰ They examined historical records and accounts of fevers and epidemics, in the belief that history would significantly help in the discovery and definition of specific disease entities or contagia. These then could be classified, and a natural system of diseases be delineated, not only analogous to botany and zoology, but in particular to palaeontology. Just as at this time it was recognized that the fossil record showed the periodic extinction of certain organic forms and the appearance of new ones in their place, so it was argued that historical pathology could demonstrate the disappearance and origination *de novo* of particular disease types.

From the 1840s onwards, the popularity of the “naturhistorische Schule” (nature-historical school) in German medicine declined. Bleker cites Mühry as a representative opponent of the notion that diseases may change with time.¹¹ And indeed, in his early *Vergleichung der Medizin in Frankreich, England und Deutschland*, he criticized—although mildly—the famous clinician Johann Lucas Schönlein (1793–1864) and his school for having advocated that diseases are not a condition of the human body, but can be described and classified like plants. Half a dozen years later, Mühry's criticism of the historicist approach had become more aggressive. In a 1843 review paper, ‘Über die historische Pathologie und die geschichtlichen Änderungen der Krankheiten’ (On historical pathology and changes over time of

⁹ Theus, *op. cit.*, note 6 above, p. 69.

¹⁰ J Bleker, ‘Die Idee einer historischen Entwicklung der Krankheiten des Menschengeschlechts und ihre Bedeutung für die empirische Medizin des frühen 19. Jahrhunderts’, *Berichte zur Wissenschaftsgeschichte*, 1985, 8: 195–204. See also her *Die naturhistorische Schule, 1825–1845. Ein Beitrag zur Geschichte der klinischen Medizin in Deutschland*, Stuttgart, Fischer, 1981; and her ‘Die historische Pathologie, Nosologie und Epidemiologie im 19. Jahrhundert’, *Medizinhistorisches Journal*, 1984, 19: 33–52.

¹¹ Bleker, ‘Die Idee einer historischen Entwicklung der Krankheiten’, note 10 above, p. 202.

diseases), published in the reformist *Archiv für physiologische Heilkunde* (1843), he emphatically objected to the notion that diseases have a history in the sense of change over time:

A history of diseases, however vague the concept of disease may be, is always a history of natural objects or processes. Nature has no history, however, at least not in the sense of independent changes as a further development of its creation, and in this respect contrasts with the spirit of mankind, which is a function of time and of which the continuous train of thought expresses itself over successive generations in world history and shapes this. Changes in nature are in part only movements of physical relationships or life processes of organic individuals, which within constant laws repeat themselves in a changeless way; in part such changes are produced by the influence of humans and their history. Thus air, water and land remain the same, and plants and animals live and die, returning in unchanged form in other generations.¹²

If diseases are indeed animal- or plant-like entities then they will be constant, just as species are known not to have changed ever since the last geological revolution. When previously unknown diseases appear or when familiar diseases erupt with new virulence then

... the effect of humans on nature has to be taken into account, namely that trade and travel, military campaigns and emigration can spread diseases, or that as a result of cultivation the soil can be worked differently, forests cleared, indeed even the climate be changed, and that as a result of discoveries and inventions diet, clothing and habits can change, wherefore causes [of disease] are brought into contact with the [human] organism or other ones are kept away from it.¹³

Human culture constantly changes, but—Mühry maintained—“die Natur wiederholt sich ewig” (nature for ever repeats itself). Mühry then expanded this critique into the booklet, *Über die historische Unwandelbarkeit der Natur und der Krankheiten* (On the Historical Constancy of Nature and of Diseases), tying pathology to the then dominant, Cuvierian view of the history of the earth and of life, to which the leading German naturalists of the period adhered: Leopold von Buch (1774–1853), Bernhard von Cotta (1808–1879), and also Alexander von Humboldt.

¹² A Mühry, ‘Über die historische Pathologie und die geschichtlichen Änderungen der Krankheiten’, *Archiv für physiologische Heilkunde*, 1843, 2: 544–65, p. 545: “Eine Geschichte der Krankheiten, mag auch der Begriff von Krankheit noch so unbestimmt sein, ist immer eine Geschichte natürlicher Gegenstände oder Vorgänge. Die Natur aber hat keine Geschichte, wenigstens keine selbständige Änderung als weitere Entwicklung ihrer Schöpfung, und steht hier im Gegensatze zu dem geschichtlichen Geiste der Menschheit, deren in den folgenden Generationen sich fortsetzende Gedankenfolge eben in der Weltgeschichte sich äussert und diese bildet. Die Änderungen in der Natur sind theils nur Bewegungen in ihren physikalischen Verhältnissen oder in den Lebensprocessen der organischen Individuen, welche innerhalb beständiger Gesetze in bleibender Weise sich nur wiederholen, theils sind sie durch Einwirkung der Menschen und deren Geschichte hervorgebracht. So bleiben Luft, Wasser und Land dieselben, und Pflanzen und Thiere leben und sterben, in anderen Generationen in unveränderter Form wiederkehrend.”

¹³ Mühry, ‘Über die historische Pathologie’, note 12 above, pp. 546–47: “Vielmehr ist die Einwirkung des Menschen auf die Natur zu berücksichtigen, namentlich dass Handel und Wandel, Heereszüge und Auswanderungen Krankheiten verschleppen können, oder dass durch die Cultur der Boden anders bebaut, Wälder gelichtet, Wasser ausgetrocknet, ja das Klima überhaupt einigermassen umgewandelt werden kann, und dass durch Entdeckungen und Erfindungen Nahrung, Kleidung, Sitten geändert, also Ursachen mit dem Organismus in Berührung gebracht oder andere davon abgehalten werden.”

Bleker assumes that Mühry, in opposing historical pathology, rejected the notion that diseases are independent entities of natural history, rather than conditions of the human body. This, however, is not quite correct. Mühry appears to have changed his mind on this point and in his publications of the early 1840s was leaning towards the view, proposed long before by Thomas Sydenham (1624–1689), that diseases can be thought of as plant-like organisms. This idea of diseases as plants Mühry did not develop in the context of a Linnean or Cuvierian classification, however, but in an ecological context of geographic distribution: a nosological system was possible—Mühry argued—using the classificatory criterion of geographical provinces. A meaningful taxonomy of human diseases could be worked out by relating the global distribution of diseases to the then newly defined thermal zones of the earth.

Humboldtian Medical Geography and Reform

Mühry's medical geography was an integral part of the contemporary drive for medical reform. He was an enthusiastic and active reformist, passionately advocating the cause of scientific medicine. For that purpose, he used the *Hannoversche Annalen für die gesammte Heilkunde*, of which for a number of years (1844–1846) he was co-editor. In an 1844 essay, entitled 'Einige Worte über die Kritik in der Medizin und ihre gegenwärtige Aufgabe' (A few Words on Medical Critique and on its Current Purpose), he expressed the wish that one could turn medicine into one of the so-called exact sciences ("dass man die Medicin ganz zu einer der sogenannten exacten Wissenschaften machen könnte").¹⁴ His strategy for accomplishing this was two-pronged; one prong consisted in attacking the nature-philosophical school in Germany. In this he followed his father, who having initially been an advocate of Brunonianism, later abandoned this in favour of "the exact method".¹⁵ Already in his 1836 comparison of French, English and German medicine, Mühry approvingly observed that German medicine had liberated itself from the domination of philosophy (read: *Naturphilosophie*), and was moving closer to the natural sciences, following the road of empirical learning, to the particular benefit of anatomy, physiology and pathology.¹⁶ In his 1844 essay he again recommended the empirical approach which had proved beneficial to physiology.¹⁷

The second prong of his strategy existed in the annexation of physical geography which by then—the middle of the nineteenth century—had become a celebrated form of natural science.¹⁸ In defining his own medical geography, Mühry stated:

If one wants to characterize the entire work with a few words, one can do so correctly by describing it as the first attempt to connect the recently developed physical geography with

¹⁴ A Mühry, 'Einige Worte über die Kritik in der Medizin und ihre gegenwärtige Aufgabe', *Hannoversche Annalen für die gesammte Heilkunde*, 1844, 1: 61–73, p. 72.

¹⁵ *Allgemeine deutsche Biographie*, s.v. 'Mühry, Georg Friedrich'.

¹⁶ A Mühry, *Darstellungen und Ansichten zur Vergleichung der Medicin in Frankreich, England und Deutschland*, Hanover, Hahn, 1836, p. 270.

¹⁷ Mühry, 'Über die Kritik in der Medizin', note 14 above, p. 72. See also Mühry's 'Schönlein's klinische Vorträge in dem Charité Krankenhause zu Berlin', *Hannoversche Annalen für die gesammte Heilkunde*, 1842.

¹⁸ See, for example, D N Livingstone, *The Geographical Tradition*, Oxford, Blackwell, 1992, pp. 134–8.

physiology and medicine (and one can add, that the author for the execution of this work has had for more than three years such unlimited leisure, with the free use of one of the first public libraries, as rarely happens).¹⁹

The second half of this quotation highlights the fact that Mühry composed his medical geography not on the basis of field work, but as a collector of literature. He repeatedly expressed pride and pleasure in the fact that for his work he had the use of one of the world's best academic libraries, namely the Göttingen University Library. Here he avidly collected a large body of literature on medical geography, medical topography, physical geography, climatology and various related subjects. The 284-pages long second volume of his *Grundzüge der Noso-Geographie* consisted of 350 published sources, discussed and arranged according to geographical regions. Two years later, in his *Grundzüge der Klimatologie*, Mühry listed 570 published sources.²⁰ The most commonly cited ones were the various English and German classics of the first half of the nineteenth century on epidemiology and on tropical medicine, such as Noah Webster's *A Brief History of Epidemic and Pestilential Diseases* (London edition, 1800), Edward Bancroft's *An Essay on the Disease Called Yellow Fever, with Observations Concerning Febrile Contagion, Typhus Fever, Dysentery and the Plague* (edition of 1820), Friedrich Schnurrer's *Chronik der Seuchen* (1823–1825), Moritz Hasper's *Über die Natur und Behandlung der Krankheiten der Tropenländer* (1831), and Heinrich Häser's *Historisch-pathologische Untersuchungen, als Beiträge zur Geschichte der Volkskrankheiten* (1839–1841).

Indicative of Mühry's Humboldtian allegiance were the dedications in his three major books on medical geography. He dedicated the *Grundzüge der Noso-Geographie* to Alexander von Humboldt, "the greatest scientist of our century whose observations, interpretations and totality-embracing overviews have provided the ground rules also for the present work" ("dem grössten Naturforscher unseres Jahrhunderts, dessen Beobachtungen, Deutungen und das Ganze umfassende Überblicke die Grundregeln gegeben haben auch für das vorliegende Werk"). His *Grundzüge der Klimatologie* was dedicated to one of Britain's most Humboldtian of scientists, John Herschel (1792–1871), "whose national origin in Germany will never be forgotten" ("dessen vaterländische Abkunft in Deutschland niemals vergessen werden wird"). The dedication of the *Allgemeine geographische Meteorologie*, the third of Mühry's trilogy on medical geography, was addressed to the International Statistical Congress, which had met in the years 1853, 1855 and 1857 in Brussels, Paris and Vienna.

Instrumental in drawing Mühry's attention to physical geography may well have

¹⁹ Mühry, *Klimatologische Untersuchungen oder Grundzüge der Klimatologie in ihrer Beziehung auf die Gesundheits-Verhältnisse der Bevölkerungen*, Leipzig and Heidelberg, C F Winter, 1858, p. ix: "Will man das ganze Werk mit kurzen Worten charakterisiren, so bezeichnet man es richtig, als den ersten Versuch einer Verbindung der in neuerer Zeit ausgebildeten physikalischen Geographie mit der Physiologie und Heilkunde (und es kann noch hinzugefügt werden, dass der Verfasser zur Ausarbeitung mehr als drei Jahre eine so unbeschränkte Musse, mit freier Benutzung einer der ersten öffentlichen Bibliotheken, gehabt hat, wie sie wohl selten vorkommt)."

²⁰ A Mühry, *Thesaurus Noso-Geographicus oder geordnete Sammlung noso-geographischer Berichte, mit hinzugefügten Commentationen*, being the second part of his *Die geographischen Verhältnisse der Krankheiten oder Grundzüge der Noso-Geographie, in ihrer Gesamtheit und Ordnung und mit einer Sammlung der Thatsachen*, Leipzig and Heidelberg, C F Winter, 1856.

been the appearance at this time of the first two volumes of Alexander von Humboldt's *Kosmos* (vol. 1, 1845; vol. 2, 1848) and the nearly simultaneous appearance of the volume of illustrations to *Kosmos*, the *Physikalischer Atlas*, published by Humboldt's cartographic collaborator Heinrich Berghaus.²¹ The atlas used to perfection the representational technique of isolines. In 1817, Humboldt had proposed to depict the distribution of heat over the northern hemisphere by means of isotherms (isotheres, isochems), making possible a sophisticated delineation of thermal zones across the globe (Chapter 9, Figure 2). The isoline proved immensely successful and popular, also in the plotting of other global variables;²² Mühry borrowed the isotherm technique to help delineate and define his noso-geographical classification (Figure 1). Isotherms had been used before in medical geography, most prominently on the 1852 'Planiglob zur Übersicht der geographischen Verbreitung der vornehmsten Krankheiten' (Planisphere showing the geographic distribution of the main diseases), published in the second edition of the Berghaus *Atlas* (Chapter 11, Figure 1); but these had not been used to define noso-geographical provinces.²³

Diseases related in a variety of ways to the physical environment, and by plotting the known occurrences of particular diseases on a world map it appeared—Mühry maintained—that they could be grouped into four geographical classes: (1) ubiquitous diseases, which were not temperature sensitive (smallpox, measles, scarlet fever, whooping cough, and many others); (2) diseases that were temperature-dependent and were enclosed within climatic zones (malaria, yellow fever, cholera, typhoid, etc.); (3) so-called singular-endemic diseases, which occurred in areas with both north-south and east-west boundaries (e.g., various ulcerations); (4)—an odd category—diseases that were absent from particular areas (in Ceylon and Hindustan phthisis was rare; in Nubia, haemorrhoids did not occur; in North America obesity was so uncommon that people who wanted to lose weight should go there). For those diseases that were temperature-sensitive, biogeography provided an analogy to describe their distribution, and Mühry defined what he believed was the northern isotherm boundary for malaria (40°F) and the southern isotherm for typhoid (74°F).²⁴

The plant model served Mühry to formulate a new theory of miasmas, which he double-published, in his *Noso-Geographie* and in the *Zeitschrift für rationelle Medicin* (1854, 1855).²⁵ He speculated that miasmas, which caused such diseases as malaria, yellow fever and cholera, probably were "microscopically small, germinating organisms, most likely fungi and dust-like fungal spores, each with its own toxic

²¹ On the connection of *Kosmos* with the *Physikalischer Atlas* see H Beck, 'Zu dieser Ausgabe des Kosmos', in H Beck (ed.), *Alexander von Humboldt: Studienausgabe*, Darmstadt, Wissenschaftliche Buchgesellschaft, 1993, vol. 7(2), pp. 363–84.

²² See H Berghaus, *Physikalischer Schul-Atlas*, Gotha, Justus Perthes, 1850, *passim*.

²³ H Berghaus, *Physikalischer Atlas*, 2nd ed., Gotha, Justus Perthes, 1852, part 7, no. 2.

²⁴ Mühry, *Grundzüge der Noso-Geographie*, note 20 above, vol. 1, pp. 76–121; see also his 'Über die Abwesenheit des Typhus in den Tropenländern und auf der ganzen Südhalbe der Erde', *Zeitschrift für rationelle Medicin*, 1854, n.s., 5: 257–68.

²⁵ Mühry, *Grundzüge der Noso-Geographie*, note 20 above, vol. 1, pp. 122–54; 'Über die Natur der Miasmen, als vegetabilische Organismen vorgestellt; aus geographischem Gesichtspunkte', *Zeitschrift für rationelle Medicin*, 1854, n.s., 5: 286–306; see also his 'Über den Unterschied der contagiösen und der miasmatischen Krankheiten, besonders über die Contagien der Pest und des Typhus; vom geographischen Standpunkte', *ibid.*, 1855, n.s., 6: 211–26.

properties”.²⁶ Because of their vegetable nature, they were distributed according to temperature and soil. From these independently living miasmatic “plants”, Mühry distinguished contagia, which, too, were a form of plant-life, “fermentation-fungi”; but they lived parasitically inside the human body, and therefore were independent from temperature and soil, except for a few, namely the contagia that caused plague and typhoid, which, being temperature-sensitive, occurred within climatic zones.²⁷

One of Humboldt’s representational innovations related the vertical to the horizontal distribution of plant types. Having returned from his journey of exploration of the Americas (1799–1804), Humboldt published as part of his “amerikanisches Reisewerk” the *Nova genera et species plantarum*, adding to the first volume of 1815 a table, ‘Geographiae plantarum lineamenta’ (Outlines of a geography of plants), that showed the vertical, zoned distribution of plants on three mountains, one in the tropics, another in the temperate region and a third in a polar region, demonstrating his famous law that the changes in plant distribution by altitude matched the ones by latitude.²⁸ This law was again depicted by Berghaus, who showed side-by-side vegetation profiles on Tenerife and in the Himalayas.²⁹ In another striking instance of a transfer of representational structures, Mühry used also this Humboldtian figure, and devised a hypsometric or orographic classification of diseases (Figure 2). He illustrated the importance of the factor of rarified air, pointing to the absence of phthisis in elevated geographical provinces, and argued for the therapeutic potential of high altitude locations.³⁰

Mühry may well have been the most representative of the mid-century Humboldtian medical doctors, but he was not the only one. There was also Caspar Friedrich Fuchs (1803–1866), a physician in Brotterode, a town in Thüringen. In his *Medizinische Geographie* (1853) and his *Die epidemischen Krankheiten in Europa* (1860), he made prominent use of various Humboldtian representational structures, in particular Humboldt’s iconic cross-sectional profile of the Andes from the Pacific to the Atlantic at the latitude of Chimborazo, ‘Tableau physique des Andes et des pays voisins’ (Physical tableau of the Andes and adjacent Regions), published with his *Essai sur la géographie des plantes* (1805–7).³¹ Nor were the medical geographers who used Humboldtian isotherms exclusively German. The anthropologist Arthur Bordier (1841–1910), first holder of the chair of medical geography at the Parisian École d’anthropologie, in his *La Géographie médicale* (1884), used isotherm maps of the distribution of particular diseases to dramatic effect (Chapter 2, Figure 2).³²

²⁶ Mühry, *Grundzüge der Nosogeographie*, note 20 above, vol. 1, p. 123: “mikroskopisch kleine, keimfähige Organismen, am wahrscheinlichsten Pilze und staubartige Pilz-Sporen, von eigenthümlich intoxicirender Eigenschaft”.

²⁷ *Ibid.*, p. 156.

²⁸ A Bonpland and A von Humboldt, *Nova genera et species plantarum*, Paris, Librairie Grecque-Latine-Allemande, 1815, vol. 1, first, unnumbered plate.

²⁹ See, for example, Berghaus, *Physikalischer Schul-Atlas*, note 22 above, plate 20.

³⁰ Mühry, *op. cit.*, note 19 above, part 1, pp. 53–98.

³¹ See Rupke, *op. cit.*, note 5 above, plate 1 and fig. 1.

³² A Bordier, *La géographie médicale*, Paris, Reinwald, 1884, pp. 252–64, plate 4.

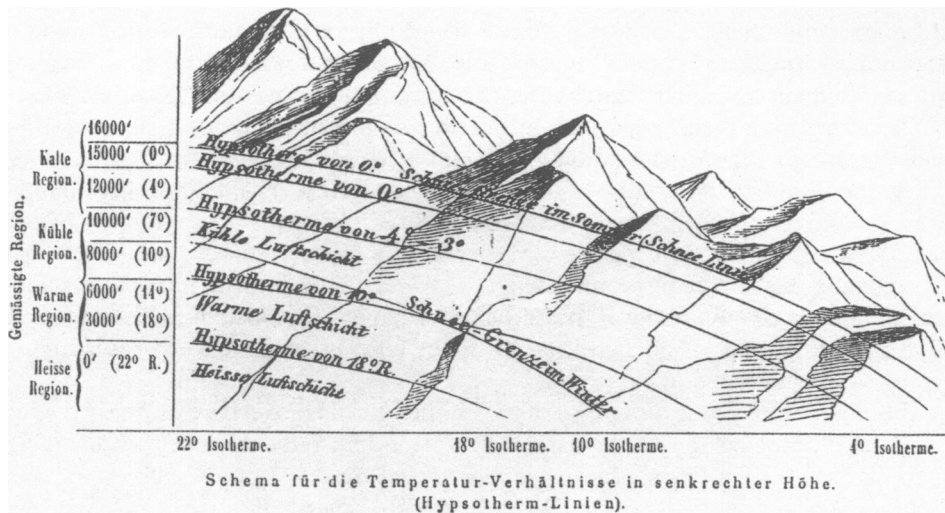


Figure 2: Adolf Mühry's 'Diagram of vertical temperature relationships (hypsotherms)', used as a scheme to classify human diseases (from: *Klimatologische Untersuchungen oder Grundzüge der Klimatologie in ihrer Beziehung auf die Gesundheits-Verhältnisse der Bevölkerungen*, Leipzig and Heidelberg, C F Winter, 1858, fig. 1, on p. 8).

Political Co-ordinates of Mühry's Medical Geography

Bleker argues that the move away from historical pathology coincided with a change in the political climate, when many German doctors, as part of the "bürgerliche Opposition" (opposition of the middle classes), returned to the notion of natural rights in an effort to legitimize their political purposes³³ (presumably pro-parliamentary democracy). It would be interesting to explore the political location of Mühry and his kind of medical geography. Sadly, there is little if any direct evidence as to his politics. It may be significant that the year 1848, i.e., the year of anti-monarchist revolutions across Europe, marked a turning point in Mühry's career. In spite of the close connection of the Mühry family to the House of Hanover, it appears that Mühry was not a monarchist, and that his post-1848 retreat into private scholarship and his departure from Hanover for Göttingen had a political dimension. By leaving the medical profession, he intentionally left public service. Correspondence from around 1870, with the Göttingen professor of geology and palaeontology Karl von Seebach (1839–1880), shows that Mühry harboured a grudge against the House of Hanover, in particular against Ernst August, Duke of Cumberland (1771–1851), who became Hanoverian King in 1837, and whom he described as "völlig unfähig" (completely incompetent).³⁴ Mühry also intensely resented the Prussian State, of which Hanover in 1866 had become a part. "Ich habe ein unüberwindliches Misstrauen gefasst gegen Alles was mit preussischem Wesen in Verbindung steht" (I have come

³³ Bleker, 'Die Idee einer historischen Entwicklung der Krankheiten', note 10 above, p. 202.

³⁴ Mühry to Seebach, 29 Nov. 1870, in Theus, op. cit., note 6 above, p. 56.

to be insurmountably mistrustful of everything that is Prussian), Mühry wrote.³⁵ He accused England, Prussia, Russia and Mecklenburg-Schwerin of aiding the perpetuation of a dynastic system that had been “a system of defamation of the worst kind, with which for several decades a number of my nearest relatives have been persecuted, which defamation was meant to be spread energetically and widely across the world to become part of history, and against which I with my limited strength and in self-defence have had to fight”.³⁶ In the 1878 autobiographical sketch (written in the third person), Mühry darkly referred to “obstacles that have accompanied his career in peculiar ways” (“Widerstände, welche überhaupt seinen Lebensgang in eigenthümlicher Weise begleitet haben”).³⁷ No indication was given as to the precise nature of the obstacles or the content of the alleged campaign of defamation against the Mühry family.

Although Mühry was no supporter of either the Hanoverians or the Prussian court, he did not belong to the camp of the Hegelian radicals either. As co-editor of the *Hannoversche Annalen für die gesammte Heilkunde*, Mühry was for some time closely associated with its editor, Georg Philip Holscher (1792–1852), who in 1848 fought on the side of the revolutionary party. Mühry, however, appears to have shared with Holscher nothing more radical than a zeal for the scientific reform of medicine. Mühry’s close association with the Humboldtians would indicate that he was a liberal conservative, who objected to the absolute monarchy, but believed in reform rather than revolution.³⁸ This is indicated also by his later, popular booklet *Über die Exacte Natur-Philosophie* (1877), in which he advocated an anti-materialist teleology.³⁹

A further indication of the socio-political location of Mühry’s medical geography was provided by the lengthy attack on his *Grundzüge der Noso-Geographie* which appeared in five instalments in the *Wiener medicinische Wochenschrift* in 1856. It was written by August Hirsch (1817–1894), later the Berlin professor of hygiene and medical history and author of the classic *Handbuch der historisch-geographischen Pathologie* (1860) (this volume, Chapter 6).⁴⁰ Hirsch vehemently objected to the Humboldtian environmentalism of Mühry’s medical geography, aligning himself instead with the radical programme of medical reform advocated by Rudolf Virchow (1821–1902). To them, “Volkskrankheiten” (diseases afflicting the common people) are first and foremost a consequence of social evils, and public health cannot be

³⁵ Mühry to Seebach, 28 June 1871, *ibid.*, p. 58.

³⁶ Mühry to Seebach, 29 Nov. 1870, *ibid.*, p. 56: “... ein System der Verläumdung übelster Art, womit mehre meiner nächsten Anverwandten mehre Jahrzehnt hindurch verfolgt worden sind, welche Verläumdung mit Aufwendung grösster Macht über die Erde weit verbreitet und geschichtlich gemacht werden sollte, und gegen welche ich mit meinen schwachen Kräften Nothwehr ausübend habe ankämpfen müssen”.

³⁷ Mühry, ‘Curriculum vitae’, *ibid.*, p. 69.

³⁸ On Humboldt’s politics, see, for example, M Bowen, *Empiricism and Geographical Thought: from Francis Bacon to Alexander von Humboldt*, Cambridge, Cambridge University Press, 1981, pp. 240–55.

³⁹ A Mühry, *Über die Exacte Natur-Philosophie*, Göttingen, Huth, 1877.

⁴⁰ A Hirsch, ‘Werth und wissenschaftliche Bedeutung der geographischen und historischen Pathologie’, *Wiener medicinische Wochenschrift*, 1856, 60: 302–4; 320–2; 335–8; 352–4; 368–70. See also his criticism of Humboldtian medical geography in his *Handbuch der historisch-geographischen Pathologie*, Erlangen, Enke, 1860, vol. 1, pp. 2–3.

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separated from social and political change.⁴¹ By contrast, Mühry's Humboldtian medicine was focused on nosology, and little concerned with therapy. To the extent that his climatological interpretation of the occurrence of diseases had therapeutic implications, these prescribed moving out of a particular disease province and into others where the disease did not exist.⁴² As a form of therapy this was useless for the impoverished masses, and offered hope exclusively to the well-to-do, who could afford expensive recuperative trips to spas, mountain retreats, Mediterranean or overseas resorts.

Conclusion

Mühry's medical geography was a product of book learning, inspired by a concern with the scientific status of medicine, and not primarily with the health of European colonialists or travellers in tropical regions of the world. Mühry wrote his contributions to the subject during the years following the Revolution of 1848 when, disenchanted with his family's employers—the Hanoverians—he retired disgruntled to Göttingen, his Alma Mater, where he allied himself with a liberal, non-radical tradition, of which Alexander von Humboldt was a prominent representative. Mühry's Humboldtian medical geography took pathology away from the historicism of the "naturhistorische Schule", but failed to find acceptance with the more radical and socially engaged followers of Virchow.

⁴¹ See Bleker, 'Die historische Pathologie', note 10 above, p. 46; see also her 'Die Medizinalreformbewegung von 1848/49. Zur Geschichte des ärztlichen Standes im 19. Jahrhundert', *Deutsches Ärzteblatt—ärztliche Mitteilungen*, 1976, 73: 2901–5; see also B A Boyd, *Rudolf Virchow: the Scientist as Citizen*, New York and London, Garland, 1991.

⁴² Mühry, *Grundzüge der Klimatologie*, note 19 above, *passim*.