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SCIENTISTS AROUND GOETHE

We are used to the term “*The time of Goethe, the poets and writers around Goethe*. However, the great poet was also a talented scientist. The question is what researchers, particularly natural scientists and doctors, did Goethe surround himself with?”

And so – Goethe’s time. This can be counted from 1770 up to the year 1830. During these decades many outstanding personalities lived in Europe and created unforgettable works. Next to Goethe such poets and writers as Schiller, Lessing, Wieland, Klopstock wrote their classical works, famous musicians Haydn, Gluck, Mozart, Beethoven, Schubert and Weber composed immortal music. Kant, Fichte, Schelling and Hegel represented philosophy.

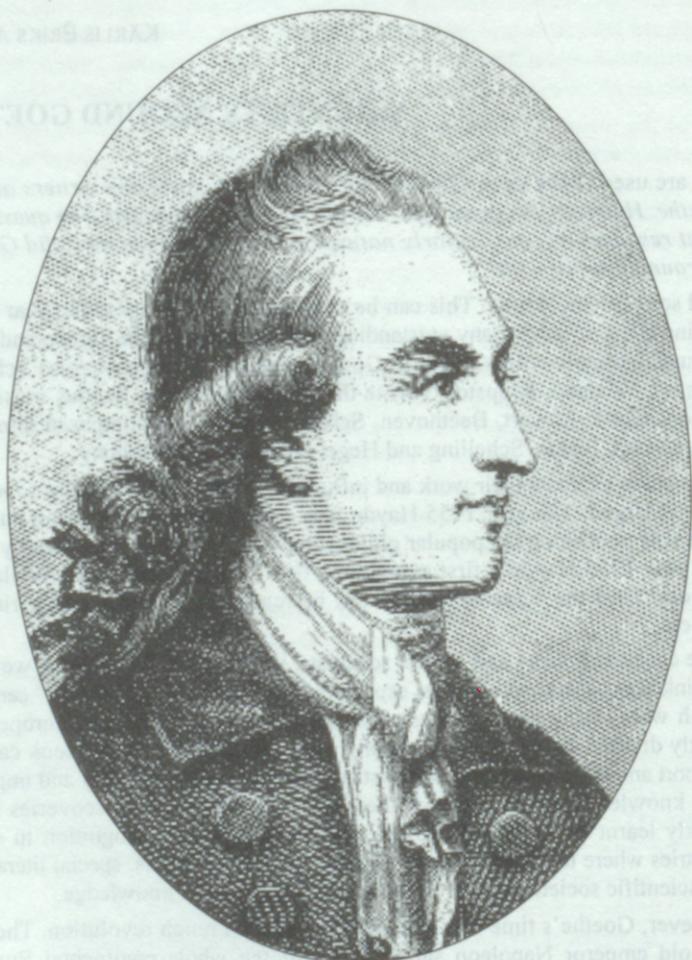
If we are to evaluate their work and influence, the so-called “*Goethe’s time*” is to be enlarged. The year 1755 Haydn was composing his first string quartet; Kant was publishing his popular philosophical articles. And thus step by step. The year 1759 Haydn’s first symphony, then Lessing again, and Wieland’s success. Thus the “*Goethe’s time*” can be regarded as the longest period of success.

If we consider doctors and natural scientists, which were near Goethe, we have to think about the great changes, especially towards the end of the 18th century, which were taking place in these branches of science. Although Europe was strictly divided, especially in Germany, where the small counties took care of passport and customs control, scientists did travel, they could study and improve their knowledge where and how they wished. Outstanding discoveries were quickly learnt by everybody. Often new ideas received recognition in other countries where they were spread. Along with study journals, special literature, and scientific societies could obtain travels exchange of knowledge.

However, Goethe’s time was also the time of the French revolution. The 35-year-old emperor Napoleon subdued almost the whole continental Europe; history witnessed new heroes – Nelson¹, Wellington². There were still countries where the hand of the holy inquisition was powerful and which tried with all their might to get rid of mediaeval obscurantism, e.g. Spain, Portugal. There were countries that kept producing interesting young talented persons, such as Russia.

KARL B. BERT A. K.

AND GOETHE



Johann Wolfgang von Goethe

One of the directions, which kept scientists busy around Goethe, was the perfection of man. Christopher Wilhelm Hufeland³ (1762–1836) represented this. He is the doctor who comes first to our minds when speaking about Goethe's friends in medicine.

Hufeland was born on the 12th of August 1762 in Bad Langensalz about 20 km north of Gotha and 30 km from Eisenach. There his father and grandfather⁴ were popular doctors till 1765, when the family moved to Weimar, where first his grandfather, then his father worked as court physicians (*Leibarzt*).

In 1775, on the 3rd of August Duke Carl Augustus⁵ started reigning. He was 18 and got rid of the guardianship of Anna Amalia⁶. He immediately invited Goethe to come to Weimar. Dr. Johann Wolfgang Goethe, though only 26, but a renowned German poet arrived in Weimar on the 7th of November 1775.

Hufeland, only 14 at that time, witnessed how the arrival of Goethe stirred quiet Weimar and Jena. Beginning with the garb itself – the young people imitated Goethe by wearing yellow pants and a vest, as well as a dark blue coat (Werther-Frack). The Hufeland family was in contact with the court of Weimar and young Hufeland was well acquainted with Goethe and Wieland⁷, the tutor of Prince Carl Augustus since 1772 and Herder⁸, who arrived in October 1776.

Later Hufeland wrote about Goethe in his autobiography. "*Man kann sich keinen schöneren Mann vorstellen. Dabei sein lebhafter Geist und seine Kraft, die seltenste Vereinigung geistiger und körperlicher Vollkommenheit, groß, stark und schön; an allen körperlichen Übungen: Reiten, Fechten, Voltigieren, Tanzen war er der erste...*"⁹.

After his medical studies in Jena and Göttingen Universities Hufeland had to return home in order to continue the practice of his father, who had gone nearly blind? He began it in Weimar, on July 1783. He himself gave an expressive description of the beginnings of his doctor's practice. He was only 21, but he had to take care of all the sick people from the borderline of Harz as far as Thüringen not only in towns, but in the county as well. From morning till night he had to run through Weimar, which was too small to use a carriage, but too big to reach all places on foot. At times a rich farmer sent him a carriage or simply a riding horse, so that he would be able to reach his destination at a distance of 4 to 5 miles. That happened in winter as well in seasons of bad roads. Besides the doctor himself had to prepare the medicines for the sick, and to enter everything into the patients' journals. The younger Hufeland was entitled to be court physician (*Hofmedicus*), which gave him quite a small sum a year – 100 thaler. He hoped to receive a higher title – *Leibarzt* as his father did and thus to earn a bigger salary.

In 1792 Hufeland delivered a chapter from his book "*Art of Prolonging Life*" at the famous Friday parties at Goethe place (*Freitagsgesellschaft*). Next year the young practising doctor became professor at the University of Jena, while his book "*Die Kunst das menschliche Leben zu verlängern*", which was published

One of the directors, which kept scientists busy around Göttingen, was the physician of man, Christoph Wilhelm Hufeland (1763-1836) represented this



Christoph Wilhelm Hufeland
young practicing doctor, Hufeland's "The Art of Prolonging Life" (1802), which was published

in 1797, became one of the most popular books not only during Goethe's time, but throughout centuries and was even translated into Chinese.

The humane idealism of Goethe, Wieland and Schiller appealed to Hufeland. The motto of the book is the words of Goethe from "Egmont":

*"Süßes Leben! Schöne freundliche Gewohnheit des Daseyns und Wirkens! – von dir soll ich scheiden?"*¹⁰ Hufeland wanted people to live longer and lead healthier lives, as well as make them better and more virtuous. He considered physical and moral health to be as important as body and soul. *"Sie fließen aus gleichen Quellen, schmelzen in eins zusammen und geben vereint erst das Resultat der veredelten und vollkommensten Menschennatur"*.¹¹

The young doctor kept thinking not only about the treatment of diseases, but of their timely prevention. He became one of the most active propagators of Jenner's vaccination against smallpox. He also wrote other important books *"Guter Rat an Mütter über die wichtigsten Punkte der physischen Erziehung der Kinder in den ersten Jahren"* (1795) and *"Ideen über Pathogenie"*. In 1795 he founded the *"Journal der praktischen Heilkunde"*, which was followed in 1799 by *"Bibliothek für praktische Heilkunde"*.

In 1800 Hufeland was invited to go to Berlin, where he worked in the *"Charité"* and was court physician to the royal family. Hufeland's family was particularly friendly with Queen Luisa, who became godmother of one of Hufeland's daughters. During Napoleon's attack, he accompanied the court to Königsberg and Tilsit. One should also mention an unheard of precedent at the religious Prussian court, although it is characteristic of Hufeland. He refused the nobility title offered by the king. He himself gave the following motivation:

"Nun wollte aber des Königs Gnade mich und meine Kinder in den Adelsstand erheben. <...> Es wird dadurch den Kindern mit dem Blut das Prinzip des Stolzes eingepflanzt, folglich andere geringer zu achten als sich – gerade das Gegent, sich mehr und höher, ja wirklich aus anderem Blut bestehend zu denken eil von dem, was das Christentum lehrt. <...> Also in Gottes Namen schlug ich aus und fühlte mich in meinem Gewissen recht erleichtert und beglückt, meinen Kindern und Nachkommen diesen ungöttlichen und unchristlichen Keim nicht eingepflanzt zu haben".¹²

Hufeland is famous all over the world. Let us only mention the year 1845, when Ogata Koan published Hufeland's *"Enchiridion medicum"*¹³ in a Japanese translation, thus giving Japan the work in pathology.¹⁴

The second question was the essential forms of man and animal. Goethe himself was seeking the simple form (type), of the variety of live organisms. Here his friend and teacher was Justus Christian Loder.¹⁵ Goethe's interest in anatomy and his spirit of research were crowned by the discovery of *os intermaxillare*. It was not Goethe's discovery that was crucial, but the proof that the structure of mammals, including that of man had a similar organisation.



Justus Christian von Loder

Goethe had been interested in the human structure for a long time. He was interested in the conception of Johann Kaspar Lavater¹⁶, a pastor from Zürich, about physiognomy. Goethe also wanted to find a connection between the outward appearance of man and his inner essence and the other way round. Ingrid Kästner writes a longer article in this volume.

In his studies of anatomy Goethe hoped to obtain knowledge about human skeletons and muscles, which he hoped to make use of at his drawing school founded in Weimar. In 1781, not long after Loder had become professor of anatomy at the Jena university, Goethe was carrying out dissections under the guidance of Loder. Goethe wrote about Loder: "...in diesen acht Tagen, die wir freilich, soviel es meine Wächterschaft litte, fast ganz dazu anwandten, Osteologie und Myologie demonstirt. Zwei Unglückliche waren uns eben zum Glück gestorben, die wir denn auch ziemlich abgeschält und ihnen von dem sündigen Fleische geholfen haben."¹⁷

There is an article in this volume by Juris Salaks about the Riga born famous scientist J. Ch. Loder; therefore we shall refrain from a wider description of Loder's life and work.

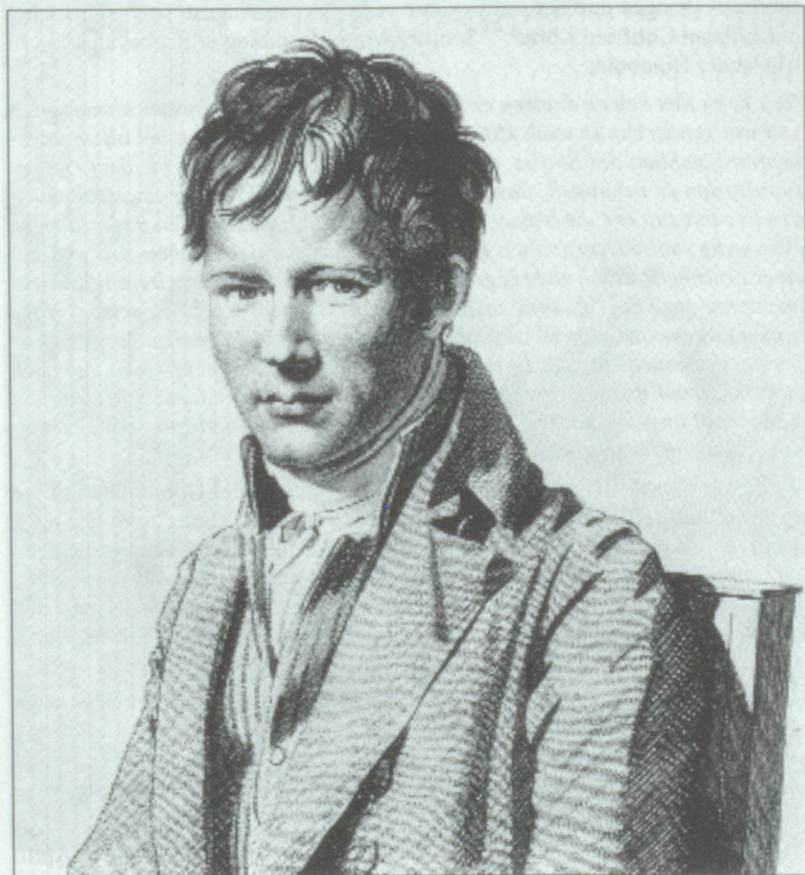
Wilhelm von Humboldt¹⁸ (1767–1835) – philosopher, philologist, statesman and founder of the University of Berlin. In 1791 he married Caroline von Dacheröden¹⁹, who had inherited Burgöner and Auleben manors in Thüringen. Caroline was acquainted with Goethe and Schiller and was a close friend of Schiller's wife Lotte von Lengefeld²⁰. Soon the 24-year-old Wilhelm got acquainted with both poets. He was well versed in ancient Greek and was fully acquainted with antique hellenism, which was a safe bridge to both Classics of Weimar.

In 1794 Wilhelm von Humboldt settled with his family in Jena. Wilhelm was closer to Schiller with whom he could discuss metre and metrics; his relationship with Goethe was slower. In the spring of 1794 Wilhelm's twenty-five year old brother Alexander, who was a counsellor of the mining industry (*Bergrat*), visited Jena.

Friedrich Wilhelm Heinrich Alexander von Humboldt²¹ was born in the same year as Napoleon, the duke of Wellington and the poet Arndt, namely in 1769; he died when he was nearly 90 years old, in 1859. He was a universal genius, a universal self-made man.

At that time Alexander was studying irritability of nervous fascia by chemical substances. He was much influenced by Schiller's personality. The poet had studied medicine; therefore it was interesting to discuss with him his observations and experiments. The poet was also impressed by the talented youth and asked Alexander to write an article for his magazine. That was "*Horen*". It is interesting to note those Alexander von Humboldt was the only natural scientist whom Schiller asked to be an author for this magazine. In 1795 the first and only article by Alexander von Humboldt was published in "*Horen*"

in the 2nd place" (L. 206-8). However, it was not a natural science article, but a
synthetical one "die Naturgeschichte der Pflanzen der Gegend".
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in the 5th "piece" (5 Stück). However, it was not a natural science article, but a symbolical tale "*Die Lebenskraft oder der rhodische Genius*"²².

One might expect that Humboldt's natural scientific approach when trying to define the notion of life, the strength of life (*Lebenskraft*), his deep and thorough approach to life and death might have appealed to Schiller. However, Schiller expressed a very negative attitude to the article and his favourable approach changed into antipathy. Some years later in August 1797 in his letter to Christian Gottfried Körner²³ Schiller wrote a scathing critical evaluation of Alexander Humboldt:

*"Ich kann ihm keinen Funken eines reinen, objektiven Interesses abmerken, – und wie sonderbar es auch klingen mag, so finde ich in ihm, bei allem ungeheuren Reichtum des Stoffes, eine Dürftigkeit des Sinnes, die bei dem Gegenstande, den er behandelt, das schlimmste Übel ist. Es ist der nackte, schneidende Verstand, der die Natur, die immer unfaßlich und in allen ihren Punkten ehrwürdig und unergründlich ist, schamlos ausgemessen haben will und mit einer Frechheit, die ich nicht begreife, seine Formeln, die oft nur leere Worte und immer nur enge Begriffe sind, zu ihrem Maßstabe macht. Kurz, mir scheint er für seinen Gegenstand ein viel zu grobes Organ und dabei ein viel zu beschränkter Verstandesmensch zu sein. Er hat keine Einbildungskraft, und so fehlt ihm nach meinem Urteil das notwendigste Vermögen zu seiner Wissenschaft, denn die Natur muß angeschaut und empfunden werden, in ihren einzelsten Erscheinungen wie in ihren höchsten Gesetzen."*²⁴

Wolfgang-Hagen Hein, who studied the life of Alexander Humboldt is of the opinion that Schiller's negative attitude towards the young man was of a deeper origin. In 1794 Schiller and Goethe had founded a friendship association (*Freundschaftsbund*), which Schiller thought to be endangered with Humboldt's arrival in Jena. Goethe liked the young researcher and their mutual talks aroused his interest in natural sciences. Goethe began to cultivate the Humboldt's, which only increased Schiller's jealousy.

Goethe who usually kept distance towards new acquaintances and treated them coolly, behaved very friendly towards Alexander Humboldt who was twenty years younger than himself. Mutual exchange of opinions was incessant and Humboldt gave Goethe the student of nature, the same thing that Schiller gave the poet Goethe.

Alexander von Humboldt had visited Weimar in 1797 at the beginning of April. On April the 26th the same year, Goethe wrote Schiller: "*Mit Humboldt habe ich die Zeit sehr angenehm und nützlich zugebracht; meine naturhistorischen Arbeiten sind durch seine Gegenwart aus ihrem Winterschlaf geweckt worden*"²⁵.

Justus Christian Loder from the University of Jena was the one who united Goethe with the natural scientists, who shared his views. Loder was a brilliant lecturer, dissector and collector and he shared his knowledge with his friends –



Schiller, brothers Wilhelm and Alexander Humboldt and Goethe in Jena

Goethe, the brothers Humboldt and also Schiller, as well as with his former student and son of his friend Hufeland, the younger. Garlieb Helwig Merkel²⁶ has also taken part in Loder's demonstrations and has described them. Wilhelm von Humboldt attended Loder's lectures in the autumn of 1794.

*"Ich habe angefangen, hier Anatomie bei Loder zu hören, und es raubt mir den ganzen Vormittag von 9 Uhr an. So leid es mir indeß auch manchmal um diese Stunden thut, so sehr interessiert mich doch das Studium, und auf dem Wege, den ich einmal eingeschlagen hatte, war es mir unentbehrlich"*²⁷, he wrote to Friedrich August Wolff on December 22, 1794.

Alexander von Humboldt wanted to obtain knowledge in anatomy for his travels abroad. On April the 18th, 1797 he wrote to Karl Freiesleben:²⁸

*"Da ich mich zu meiner westindischen Reise jetzt sehr ernsthaft vorbereite und mich dort vorzüglich mit den organischen Kräften abzugeben gedenke, so ist Anatomie jetzt mein Hauptstudium. Ich höre bei Loder ein Privatissimum, präparire selbst täglich 2 St. am Cadaver und bin so täglich fast 6-7 St. auf dem anatomischen Theater..."*²⁹

The Goethe Humboldt epistolary heritage embraces 120 letters from Goethe to Wilhelm and only 21 letter from Goethe to Alexander Humboldt. Wilhelm's Humboldt's letters were reflective formed like small works of art. It seems that he knew whom he was writing to and that the future would see his letters printed. Alexander wrote his letters hastily, they might recommend a person, accompany a book, and deliver a message. It might be that some Goethe's letters were missing, because Alexander contrary to Goethe did not amass letters, but threw them away having read them. He considered his talks with Goethe to be far more important. He felt great respect for Goethe.

The brother's attitude towards Goethe was very different. Wilhelm has not dedicated a single book to the much-honoured poet. Even books, which he sent Goethe, were not inscribed with a single word of wishing well.

Alexander acted quite differently. He had already in 1795 planned to dedicate his book to Goethe. Unfortunately he managed it only in 1807. All 18 books by Alexander are found in Goethe's library and each of them carries some heart-felt inscriptions. Goethe, too, has honoured Alexander with dedications, which Wilhelm never received.

The lively, talkative Alexander was nearer to Goethe's heart than his cool brother Wilhelm. No wonder that Wilhelm Humboldt's German translation of Aeschylus *"Agamemnon"* did particularly impress the great poet, while with the natural scientist Alexander Goethe always felt at home.

In April and December 1795 Alexander visited Jena. Here he continued his experiments with the galvanic current. Goethe and Wilhelm Humboldt also took part in them. In the winter of 1773-1774 Alexander had begun to write about cave botanics. In 1775 the work was nearing its end and Alexander



A drawing of dedication in A. von Humboldts book "*Ideen zu einer Geographie der Pflanzen*". The design dedicated to Goethe was done by Bertel Thorwaldsen in 1805, in Rome. The patron of poets Apollo is removing a veil, which covers Nature personified as Diana from Efesus. This is Goethe, symbolically meant as representing a researcher of nature. The same is meant by his "*Metamorphose der Pflanzen*" at the feet of Diana.

planned to dedicate it to Goethe. He sent his manuscript to the poet "*Über die Vegetation im Inneren des Erdkörpers*" with an additional note: "*Ich dachte das Leben, nicht die Form der lichtscheuen Pflanzen darzustellen, und hier eine Probe zu liefern, wie nach meinen Einsichten organische Wesen behandelt werden müssen. Es ist eine Lieblingsidee von mir, diese obskure Schrift Ihnen zuzueignen. Das Zueignen an sich ist freilich eine gemeine Handlung, aber in dieser Zueignung soll doch etwas mehr liegen.*"³⁰

The spring of 1797 saw Alexander in Jena for nearly 3 months, where together with Goethe he continued his experiments on the galvanic current. How much Humboldt's visit influenced Goethe can be seen from his letter to Carl Ludwig von Knebel: "*Dabei bringt noch die Gegenwart des jüngern von Humboldt, die allein hinreichte, eine ganze Lebensperiode interessant sein kann, so daß es mir manchmal recht schwer ward, mich in meinen Kreis zurückzuziehen.*"³¹

When in 1804 Humboldt returned from America, he worked up his research and decided to dedicate a book to Goethe "*Ideen zu einer Geographie der Pflanzen*". He wrote: "*Ich wollte nach so vierjähriger Abwesenheit nichts anders vor Ihnen erscheinen, als mit dem kleinen Denkmal, das meine tiefe Verehrung und innige Dankbarkeit Ihnen gestiftet hat. In den einsamen Wäldern am Amazonenflusse erfreute mich oft der Gedanke, Ihnen die Erstlinge dieser Reisen widmen zu dürfen. Ich habe diesen fünfjährigen Entschluß auszuführen gewagt. Der erste Teil meiner Reisebeschreibung, das Naturgemälde der Tropenwelt, ist Ihnen zugeeignet. Mein Freund Thorwaldsen in Rom, ein eben so großer Zeichner als Bildhauer, hat mir eine Vignette entworfen, welche auf die wundersame Eigentümlichkeit Ihres Geistes, auf die in Ihnen vollbrachte Vereinigung von Dichtkunst, Philosophie und Naturkunde anspielt.*"³²

Goethe was very much impressed by this dedication: "*Hochgeehrt fand ich mich auch in der ersten Hälfte des Jahres durch ein von Herrn Alexander von Humboldt in bildlicher Darstellung mir auf so bedeutende Weise gewidmetes gehaltvolles Werk.*"³³

Fate wanted them to meet several more times – in 1816, 1826 and 1831 when Goethe was already an old grey-haired man. What did Goethe mean to Alexander von Humboldt? This is reflected in a moving passage by Eckermann in his "*Gespräche mit Goethe*", 1826. 11. XII: "*Ich fand Goethe in einer sehr heiter aufgeregten Stimmung.*

"*Alexander von Humboldt ist diesen Morgen einige Stunden bei mir gewesen*", sagte er mir sehr belebt entgehen.

"*Was ist das für ein Mann! Ich kenne ihn so lange und doch bin ich von neuem über ihn in Erstaunen. Man kann sagen, er hat an Kenntnissen und lebendigem Wissen nicht seinesgleichen. Und eine Vielseitigkeit, wie sie mir gleichfalls noch nicht vorgekommen ist! Wohin man rührt, er ist überall zu Hause und überschüttet uns mit geistigen Schätzen. Er gleicht einem Brunnen mit vielen*

Röhren, wo man überall nur Gefäße unterzuhalten braucht und wo es uns immer erquicklich und unerschöpflich entgegenströmt. Er wird einige Tage bleiben, und ich fühle schon, es wird mir sein, als hätte ich Jahre verlebt.”³⁴

References and Notes

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- 2 Arthur Wellesley Duke of Wellington (1769–1852), Fieldmarshal, military leader.
- 3 Christoph Wilhelm Hufeland (1762–1836), doctor, studied medicine at the University of Jena; graduated from the University of Göttingen (1813). Physician in Weimar, professor at the Jena University (1793–1800), court physician of the duke at the court Saxony – Weimar. Chief doctor at the Berlin hospital Charité (from 1800). Professor at the Berlin University (from 1810).
- 4 Johann Friedrich Hufeland (1730–1787), father of Ch. W. Hufeland, physician, court physician. Johann Christoph Hufeland (1695–1768), grandfather of Ch. W. Hufeland, court physician.
- 5 Carl August (1757–1828), duke (from 1758), Grand duke of Saxony – Weimar – Eisenach (from 1815).
- 6 Anna Amalia (1739–1807), duchess, regent of her son Karl August (1758–1775).
- 7 Christoph Martin Wieland (1733–1813), writer of the German Enlightenment period, professor of philosophy in Erfurt, educator of prince Karl August, from 1772 lived in Weimar.
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- 16 Johann Kaspar Lavater (1741–1801), Swiss theologian, philosopher, poet of Christian songs, since 1768 – pastor in Zürich. Has written a philosophical treatise about physiognomy: “*Physiognomische Fragmente zur Beförderung der Menschenkenntnis und Menschenliebe*”, 1774–1778, 4 volumes.

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- 18 Freiherr Wilhelm von Humboldt (1767–1835), German philologist, philosopher, founder of the University of Berlin.
- 19 Caroline von Dacheröden, wife of Wilhelm von Humboldt, heiress of the Thüringen mansion (Burgörner) and Auleben.
- 20 Charlotte von Lengefeld (1766–1826), wife of Schiller (from 1790).
- 21 Freiherr Friedrich Wilhelm Heinrich Alexander von Humboldt (1769–1859), German natural scientist, geographer, philosopher and traveller.
- 22 *Humboldt A. von*. Die Lebenskraft oder der Rhodische Genius // *Die Horen*, 1. Jahrg., 5. Stück (1795). – S.90–96. (*Horen, schöne, den Menschen wohlgesinnte Götinnen der "Jahreszeiten", gewöhnlich drei, Töchter des Zeus und der Themis.*)
- 23 Christian Gottfried Körner (1756–1831), Shiller's friend and mentor, councillor of Consistorial council in Dresden (from 1783), councillor of the court of appeal, secret councillor of Saxony, then State councillor of Prussia (from 1815).
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