



Rosetta Stone

Andrew Dalby,¹ *et al.*

The **Rosetta Stone** (British Museum EA24) is a **granodiorite stele**, found in 1799, inscribed with three versions of a **decree** issued at **Memphis** in 196 BC during the **Ptolemaic dynasty** on behalf of King **Ptolemy V**. The top and middle texts are in **Ancient Egyptian** using **hieroglyphic** and **demotic** scripts, respectively, while the bottom is in **Ancient Greek**. As the decree has only minor differences between the three versions, the Rosetta Stone proved to be the key to deciphering **Egyptian hieroglyphs**.

The stone, carved in black **granodiorite** during the **Hellenistic period**, is believed to have originally been displayed within a **temple**, possibly at nearby **Sais**. It was probably moved in **Late Antiquity** or during the **Mameluk period**, and was eventually used as building material in the construction of **Fort Julien** near the town of **Rashid (Rosetta)** in the **Nile Delta**. It was rediscovered there in July 1799 by a French soldier, **Pierre-François Bouchard**, during the **Napoleonic campaign in Egypt**. It was the first **Ancient Egyptian bilingual text** recovered in modern times, and it aroused **widespread public interest** with its potential to decipher this **previously untranslated** hieroglyphic script. **Lithographic copies** and **plaster casts** began circulating among European museums and scholars. Meanwhile, **British troops** defeated the French in Egypt in 1801, and the original stone came into British possession under the **Capitulation of Alexandria** and was transported to London. It has been on public display at the British Museum almost continuously since 1802, and is the most-visited object there.

Study of the decree was already under way when the first full translation of the Greek text appeared in 1803. It was 20 years, however, before the transliteration of the Egyptian scripts was announced by **Jean-François Champollion** in Paris in 1822; it took longer

still before scholars were able to read Ancient Egyptian inscriptions and literature confidently. Major advances in the decoding were recognition that the stone offered three versions of the same text (1799); that the demotic text used phonetic characters to spell foreign names (1802); that the hieroglyphic text did so as well, and had pervasive similarities to the demotic (**Thomas Young**, 1814); and that, in addition to being used for foreign names, phonetic characters were also used to spell native Egyptian words (Champollion, 1822–1824).

Ever since its rediscovery, the stone has been the focus of nationalist rivalries, including its transfer from French to British possession during the **Napoleonic Wars**, a long-running dispute over the relative value of Young and Champollion's contributions to the decipherment, and demands for the stone's return to Egypt.

Three other fragmentary copies of the same decree were discovered later, and several similar Egyptian bilingual or trilingual inscriptions are now known, including three slightly earlier **Ptolemaic decrees** (the Decree of Alexandria in 243 BC, the **Decree of Canopus** in 238 BC, and the **Memphis decree of Ptolemy IV**, c. 218 BC). The Rosetta Stone is, therefore, no longer unique, but it was the essential key to modern understanding of **Ancient Egyptian literature and civilisation**. The term *Rosetta Stone* is now used in other contexts as the name for the essential clue to a new field of knowledge.

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Description

The Rosetta Stone is listed as "a stone of black **granodiorite**, bearing three inscriptions ... found at Rosetta" in a contemporary catalogue of the artefacts discovered by the French expedition and surrendered to British troops in 1801.^[1] At some period after its arrival in London, the inscriptions were coloured in **white chalk** to make them more legible, and the remaining surface was covered with a layer of **carnauba wax** designed to protect it from visitors' fingers.^[2] This gave a dark colour to the stone that led to its mistaken identification as **black basalt**.^[3] These additions were removed when the stone was cleaned in 1999, revealing the original dark grey tint of the rock, the sparkle of its crystalline structure, and a **pink vein** running across the top left corner.^[4] Comparisons with the **Klemm collection** of Egyptian rock samples showed a close resemblance to rock from a small **granodiorite** quarry at **Gebel Tingar** on the west bank of the **Nile**, west of **Elephantine** in the region of **Aswan**; the pink vein is typical of granodiorite from this region.^[5]

The Rosetta Stone is 1,123 millimetres (3 ft 8 in) high at its highest point, 757 mm (2 ft 5.8 in) wide, and 284 mm (11 in) thick. It weighs approximately 760 kilograms (1,680 lb).^[6] It bears three inscriptions: the top register in Ancient Egyptian **hieroglyphs**, the second in the Egyptian **demotic** script, and the third in **Ancient Greek**.^[7] The front surface is polished and the inscriptions lightly **incised** on it; the sides of the stone are smoothed, but the back is only roughly worked, presumably because this would have not been visible when it was erected.^{[5][8]}

Original stele

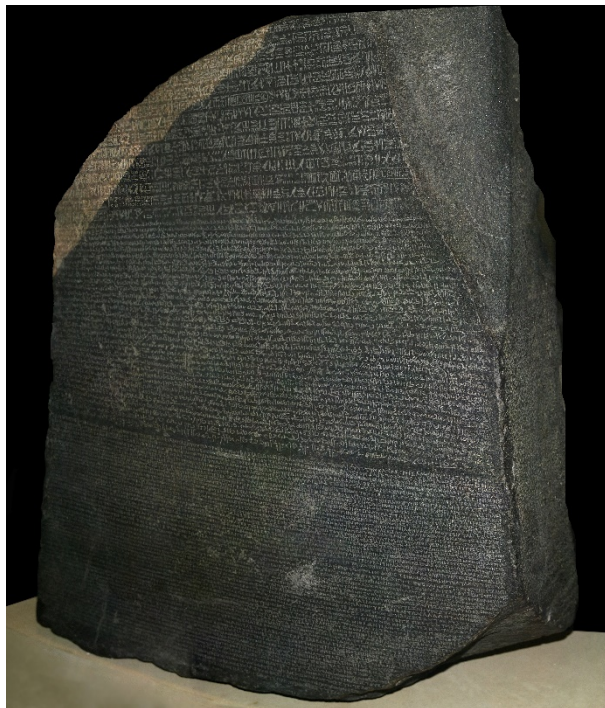


Figure 1 | One possible reconstruction of the original stele
Keith Schengili-Roberts, CC BY-SA 3.0

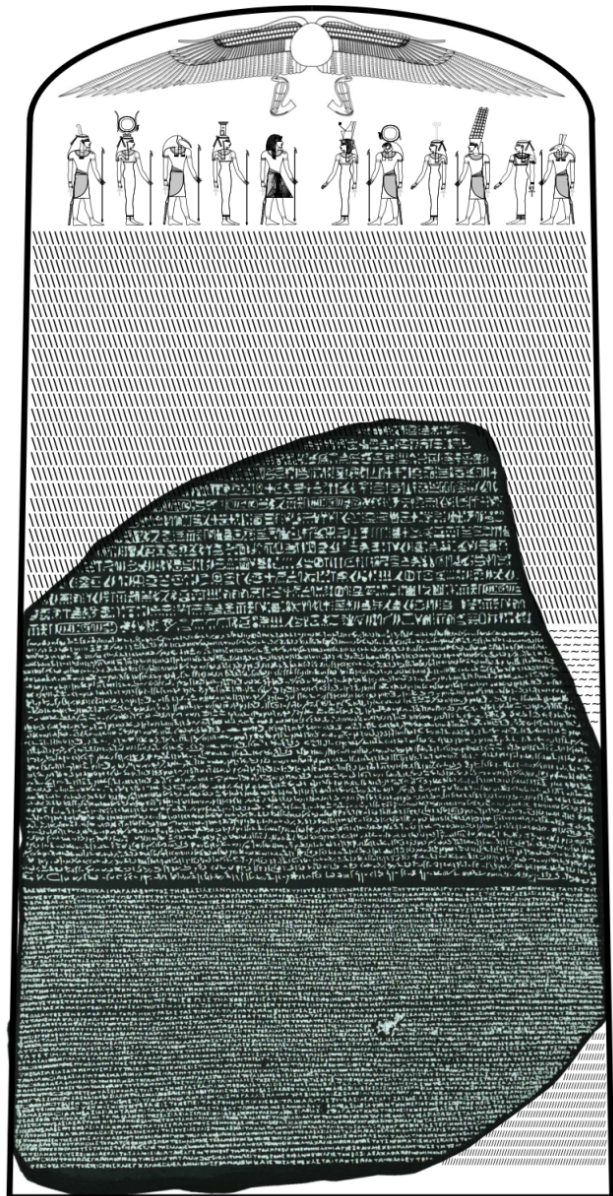


Figure 2 | One possible reconstruction of the original stele
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The Rosetta Stone is a fragment of a larger stele. No additional fragments were found in later searches of the Rosetta site.^[9] Owing to its damaged state, none of the three texts is absolutely complete. The top register, composed of Egyptian hieroglyphs, suffered the most damage. Only the last 14 lines of the hieroglyphic text can be seen; all of them are broken on the right side, and 12 of them on the left. The following register of demotic text has survived best; it has 32 lines, of which the first 14 are slightly damaged on the right side. The final register of Greek text contains 54 lines, of which the first 27 survive in full; the rest are increasingly fragmentary due to a diagonal break at the bottom right of the stone.^[10]

The full length of the hieroglyphic text and the total size of the original stele, of which the Rosetta Stone is a fragment, can be estimated based on comparable stelae that have survived, including other copies of the same order. The slightly earlier [decree of Canopus](#), erected in 238 BC during the reign of [Ptolemy III](#), is 2,190 millimetres high (7.19 ft) and 820 mm (32 in) wide, and contains 36 lines of hieroglyphic text, 73 of demotic text, and 74 of Greek. The texts are of similar length.^[11] From such comparisons, it can be estimated that an additional 14 or 15 lines of hieroglyphic inscription are missing from the top register of the Rosetta Stone, amounting to another 300 millimetres (12 in).^[12] In addition to the inscriptions, there would probably have been a scene depicting the king being presented to the gods, topped with a winged disc, as on the Canopus Stele. These parallels, and a hieroglyphic sign for "stela" on the stone itself,



(see Gardiner's sign list), suggest that it originally had a rounded top.^{[7][13]} The height of the original stele is estimated to have been about 149 centimetres (4 ft 11 in).^[13]

The Memphis decree and its context

The stele was erected after the [coronation](#) of King [Ptolemy V](#) and was inscribed with a decree that established the divine cult of the new ruler.^[14] The decree was issued by a congress of priests who gathered at [Memphis](#). The date is given as "4 Xandikos" in the [Macedonian calendar](#) and "18 Mekhir" in the [Egyptian calendar](#), which corresponds to 27 March 196 BC. The year is stated as the ninth year of Ptolemy V's reign (equated with 197/196 BC), confirmed by naming four priests who officiated in that year: [Aetos son of Aetos](#) was priest of the divine cults of [Alexander the Great](#) and the five [Ptolemies](#) down to Ptolemy V himself; the other three priests named in turn in the inscription are those who led the worship of [Berenice Euergetis](#) (wife of Ptolemy III), [Arsinoe Philadelphos](#) (wife and sister of Ptolemy II), and [Arsinoe Philopator](#), mother of Ptolemy V.^[15] However, a second date is also given in the Greek and hieroglyphic texts, corresponding to 27 November 197 BC, the official anniversary of Ptolemy's coronation.^[16] The demotic text conflicts with this, listing consecutive days in March for the decree and the anniversary.^[16] It is uncertain why this discrepancy exists, but it is clear that the decree was issued in 196 BC and that it was designed to re-establish the rule of the Ptolemaic kings over Egypt.^[17]



Figure 3 | Old Kingdom [pharaoh Pepi II](#) grants tax immunity to the priests of the temple of [Min](#).

Keith Schengili-Roberts, CC BY-SA 2.5

The decree was issued during a turbulent period in Egyptian history. Ptolemy V Epiphanes reigned from 204 to 181 BC, the son of [Ptolemy IV Philopator](#) and his wife and sister [Arsinoe](#). He had become ruler at the age of five after the sudden death of both of his parents, who were murdered in a



conspiracy that involved Ptolemy IV's mistress **Agathoclea**, according to contemporary sources. The conspirators effectively ruled Egypt as Ptolemy V's guardians^{[18][19]} until a revolt broke out two years later under general **Tlepolemus**, when Agathoclea and her family were lynched by a mob in Alexandria. Tlepolemus, in turn, was replaced as guardian in 201 BC by **Aristomenes of Alyzia**, who was chief minister at the time of the Memphis decree.^[20]

Political forces beyond the borders of Egypt exacerbated the internal problems of the Ptolemaic kingdom. **Antiochus III the Great** and **Philip V of Macedon** had made a pact to divide Egypt's overseas possessions. Philip had seized several islands and cities in **Caria** and **Thrace**, while the **Battle of Panium** (198 BC) had resulted in the transfer of **Coele-Syria**, including **Judaea**, from the Ptolemies to the **Seleucids**. Meanwhile, in the south of Egypt, there was a long-standing revolt that had begun during the reign of Ptolemy IV,^[16] led by **Horwennefer** and by his successor **Ankhwennefer**.^[21] Both the war and the internal revolt were still ongoing when the young Ptolemy V was officially crowned at Memphis at the age of 12 (seven years after the start of his reign) and when, just over a year later, the Memphis decree was issued.^[19]

Stelae of this kind, which were established on the initiative of the temples rather than that of the king, are unique to Ptolemaic Egypt. In the preceding Pharaonic period it would have been unheard of for anyone but the divine rulers themselves to make national decisions: by contrast, this way of honoring a king was a feature of Greek cities. Rather than making his eulogy himself, the king had himself glorified and deified by his subjects or representative groups of his subjects.^[22] The decree records that Ptolemy V gave a gift of silver and grain to the **temples**.^[23] It also records that there was particularly high **flooding of the Nile** in the eighth year of his reign, and he had the excess waters dammed for the benefit of the farmers.^[23] In return the priesthood pledged that the king's birthday and coronation days would be celebrated annually and that all the priests of Egypt would serve him alongside the other gods. The decree concludes with the instruction that a copy was to be placed in every temple, inscribed in the "language of the gods" (Egyptian hieroglyphs), the "language of documents" (Demotic), and the "language of the Greeks" as used by the Ptolemaic government.^{[24][25]}

Securing the favour of the priesthood was essential for the Ptolemaic kings to retain effective rule over the populace. The **High Priests of Memphis**—where the king was crowned—were particularly important, as they were the highest religious authorities of the time and had influence throughout the kingdom.^[26] Given that the decree was issued at Memphis, the ancient capital of Egypt, rather than Alexandria, the centre of government of the ruling Ptolemies, it is evident that the young king was anxious to gain their active support.^[27] Thus, although the government of Egypt had been Greek-speaking ever since the **conquests of Alexander the Great**, the Memphis decree, like the three similar **earlier decrees**, included texts in Egyptian to show its connection to the general populace by way of the literate Egyptian priesthood.^[28]

There can be no one definitive English translation of the decree, not only because modern understanding of the ancient languages continues to develop, but also because of the minor differences between the three original texts. Older translations by **E. A. Wallis Budge** (1904, 1913)^[29] and **Edwyn R. Bevan** (1927)^[30] are easily available but are now outdated, as can be seen by comparing them with the recent translation by R. S. Simpson, which is based on the demotic text and can be found on line,^[31] or, best of all, with the modern translations of all three texts, with introduction and facsimile drawing, that were published by Quirke and Andrews in 1989.^[32]

The stele was almost certainly not originally placed at **Rashid** (Rosetta) where it was found, but more likely came from a temple site farther inland, possibly the royal town of **Sais**.^[33] The temple from which it originally came was probably closed around AD 392 when **Eastern Roman** emperor **Theodosius I** ordered the closing of all non-Christian temples of worship.^[34] The original stele broke at some point, its largest piece becoming what we now know as the Rosetta Stone. Ancient Egyptian temples were later used as quarries for new construction, and the Rosetta Stone probably was re-used in this manner. Later it was incorporated in the foundations of a fortress constructed by the **Mameluke Sultan Qaitbay** (c. 1416/18–1496) to defend the **Bolbitine branch** of the Nile at Rashid. There it lay for at least another three centuries until its rediscovery.^[35]

Three other inscriptions relevant to the same Memphis decree have been found since the discovery of the Rosetta Stone: the **Nubayrah Stele**, a stele found in **Elephantine** and Noub Taha, and an inscription found at the **Temple of Philae** (on the **Philae obelisk**).^[36] Unlike the Rosetta Stone, the hieroglyphic texts of these inscriptions were relatively



intact. The Rosetta Stone had been deciphered long before they were found, but later Egyptologists have used them to refine the reconstruction of the hieroglyphs that must have been used in the lost portions of the hieroglyphic text on the Rosetta Stone.

Rediscovery

Napoleon's 1798 campaign in Egypt inspired a burst of *Egyptomania* in Europe, and especially France. A corps of 167 technical experts (*savants*), known as the *Commission des Sciences et des Arts*, accompanied the French expeditionary army to Egypt. On 15 July 1799, French soldiers under the command of Colonel d'Hautpoul were strengthening the defences of *Fort Julien*, a couple of miles north-east of the Egyptian port city of Rosetta (modern-day Rashid). Lieutenant *Pierre-François Bouchard* spotted a slab with inscriptions on one side that the soldiers had uncovered.^[37] He and d'Hautpoul saw at once that it might be important and informed General *Jacques-François Menou*, who happened to be at Rosetta.^A The find was announced to Napoleon's newly founded scientific association in Cairo, the *Institut d'Égypte*, in a report by Commission member *Michel Ange Lancret* noting that it contained three inscriptions, the first in hieroglyphs and the third in Greek, and rightly suggesting that the three inscriptions were versions of the same text. Lancret's report, dated 19 July 1799, was read to a meeting of the Institute soon after 25 July. Bouchard, meanwhile, transported the stone to Cairo for examination by scholars. Napoleon himself inspected what had already begun to be called *la Pierre de Rosette*, the Rosetta Stone, shortly before his return to France in August 1799.^[9]

The conquest of Egypt, independent of its political consequences, has enriched our country with a number of rare and ancient monuments, some entirely perfect, and of the highest and most undoubted antiquity. Col. Turner has brought home, in his Majesty's ship *Egyptienne*, a very large block of black granite, found by Menou, at Rosetta, and intended to be sent by that General, the first convenient opportunity, to France. It is charged with three inscriptions, in different languages and characters, commemorating a gift of corn from Ptolemy Philadelphus to the inhabitants of that part of the country; particularly mentioning *Mesophis*, and the month *Mezbit*, the sixth month in the Egyptian year. The first inscription is in hieroglyphicks, the second in the old Coptick, or vulgar character of the ancient Egyptians, and the last in Greek capitals. All three are tolerably perfect, and the two last but translations, it may reasonably be supposed, of the first.—With this was also brought a statue of Isis, of the same material, squatted, and her arms crossed over her breast; in the right hand an ear of corn; and between her knees the figure of Osiris, in his funeral chest, as she is said to have discovered him after his murder, by Typhon.—These two masses, destined for the British Museum, are at present in the library of the Society of Antiquaries, by whom it is proposed to publish fac-similes of the inscriptions.

Figure 4 | Report of the arrival of the Rosetta Stone in England in *The Gentleman's Magazine*, 1802

Gentleman's Magazine, public domain

The discovery was reported in September in *Courier de l'Égypte*, the official newspaper of the French expedition. The anonymous reporter expressed a hope that the stone might one day be the key to deciphering hieroglyphs.^[9] In 1800 three of the Commission's technical experts devised ways to make copies of the texts on the stone. One of these experts was *Jean-Joseph Marcel*, a printer and gifted linguist, who is credited as the first to recognise that the middle text was written in the Egyptian *demotic* script, rarely used for stone inscriptions and seldom seen by scholars at that time, rather than *Syriac* as had originally been thought.^[9] It was artist and inventor *Nicolas-Jacques Conté* who found a way to use the stone itself as a *printing block* to reproduce the inscription.^[38] A slightly different method was adopted by *Antoine Galland*. The prints that resulted were taken to Paris by General *Charles Dugua*. Scholars in Europe were now able to see the inscriptions and attempt to read them.^[39]

After Napoleon's departure, French troops held off British and *Ottoman* attacks for another 18 months. In March 1801, the British landed at *Aboukir Bay*. Menou was now in command of the French expedition. His troops, including the Commission, marched north towards the Mediterranean coast to meet the enemy, transporting the stone along with many other antiquities. He was defeated in battle, and the remnant of his army retreated to Alexandria where they were surrounded and besieged, the stone now inside the city. Menou surrendered on August 30.^{[40][41]}

From French to British possession

After the surrender, a dispute arose over the fate of the French archaeological and scientific discoveries in Egypt, including the artefacts, biological specimens, notes, plans, and drawings collected by the members of the commission. Menou refused to hand them over, claiming that they belonged to the Institute. British General *John Hely-Hutchinson* refused to end the siege until Menou gave in. Scholars *Edward Daniel Clarke* and *William Richard*



Figure 5 | Left and right sides of the Rosetta Stone, with inscriptions in English relating to its capture by English forces from the French

Keith Schengili-Roberts, CC BY-SA 3.0

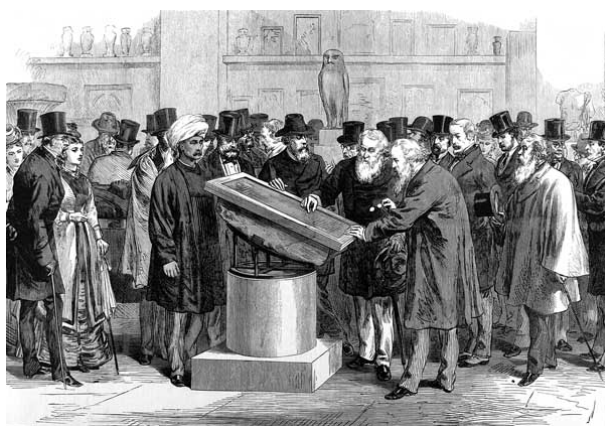


Figure 6 | Experts inspecting the Rosetta Stone during the Second International Congress of Orientalists, 1874

Illustrated London News, public domain

Hamilton, newly arrived from England, agreed to examine the collections in Alexandria and claimed to have found many artefacts that the French had not revealed. In a letter home, Clarke said that "we found much more in their possession than was represented or imagined".^[42]

Hutchinson claimed that all materials were property of the British Crown, but French scholar Étienne Geoffroy Saint-Hilaire told Clarke and Hamilton that the French would rather burn all their discoveries than turn them over, referring ominously to the destruction of the Library of Alexandria. Clarke and Hamilton pleaded the French scholars' case to Hutchinson, who finally agreed that items such as natural history specimens would be considered the scholars' private property.^{[43][43]} Menou quickly claimed the stone, too, as his private property.^{[44][44]} Hutchinson was equally aware of the stone's unique value and rejected Menou's claim. Eventually an agreement was reached, and the transfer of the objects was incorporated into the Capitulation of Alexandria signed by representatives of the British, French, and Ottoman forces.

It is not clear exactly how the stone was transferred into British hands, as contemporary accounts differ. Colonel Tomkyns Hilgrove Turner, who was to escort it to England, claimed later that he had personally seized it from Menou and carried it away on a gun-carriage. In a much more detailed account, Edward Daniel Clarke stated that a French "officer and member of the Institute" had taken him, his student John Cripps, and Hamilton secretly into the back streets behind Menou's residence and revealed the stone hidden under protective carpets among Menou's baggage. According to Clarke, their informant feared that the stone might be stolen if French soldiers saw it. Hutchinson was informed at once and the stone was taken away—possibly by Turner and his gun-carriage.^[45]

Turner brought the stone to England aboard the captured French frigate HMS *Egyptienne*, landing in Portsmouth in February 1802.^[46] His orders were to present it and the other antiquities to King George III. The King, represented by War Secretary Lord Hobart, directed that it should be placed in the British Museum. According to Turner's narrative, he and Hobart agreed that the stone should be presented to scholars at the Society of Antiquaries of London, of which Turner was a member, before its final deposit in the museum. It was first seen and discussed there at a meeting on 11 March 1802.^{BH}

In 1802 the Society created four plaster casts of the inscriptions, which were given to the universities of Oxford, Cambridge and Edinburgh and to Trinity College Dublin. Soon afterwards, prints of the inscriptions were made and circulated to European scholars.^E Before the end of 1802, the stone was transferred to the British Museum, where it is lo-



cated today.^[46] New inscriptions painted in white on the left and right edges of the slab stated that it was "Captured in Egypt by the British Army in 1801" and "Presented by King George III".^[2]

The stone has been exhibited almost continuously in the British Museum since June 1802.^[6] During the middle of the 19th century, it was given the inventory number "EA 24", "EA" standing for "Egyptian Antiquities". It was part of a collection of ancient Egyptian monuments captured from the French expedition, including a sarcophagus of Nectanebo II (EA 10), the statue of a high priest of Amun (EA 81), and a large granite fist (EA 9).^[47] The objects were soon discovered to be too heavy for the floors of Montagu House (the original building of The British Museum), and they were transferred to a new extension that was added to the mansion. The Rosetta Stone was transferred to the sculpture gallery in 1834 shortly after Montagu House was demolished and replaced by the building that now houses the British Museum.^[48] According to the museum's records, the Rosetta Stone is its most-visited single object,^[49] a simple image of it was the museum's best selling postcard for several decades,^[50] and a wide variety of merchandise bearing the text from the Rosetta Stone (or replicating its distinctive shape) is sold in the museum shops.

The Rosetta Stone was originally displayed at a slight angle from the horizontal, and rested within a metal cradle that was made for it, which involved shaving off very small portions of its sides to ensure that the cradle fitted securely.^[48] It originally had no protective covering, and it was found necessary by 1847 to place it in a protective frame, despite the presence of attendants to ensure that it was not touched by visitors.^[51] Since 2004 the conserved stone has been on display in a specially built case in the centre of the Egyptian Sculpture Gallery. A replica of the Rosetta Stone is now available in the King's Library of the British Museum, without a case and free to touch, as it would have appeared to early 19th-century visitors.^[52]



Figure 7 | Patrons at the British Museum view the Rosetta Stone as it was displayed in 1985.

Rick Dikeman, public domain



Figure 8 | A crowd of visitors examining the Rosetta Stone at the British Museum.

Iván Martínez, CC BY-SA 4.0

The museum was concerned about heavy bombing in London towards the end of the First World War in 1917, and the Rosetta Stone was moved to safety, along with other portable objects of value. The stone spent the next two years 15 m (50 ft) below ground level in a station of the Postal Tube Railway at Mount Pleasant near Holborn.^[53] Other than during wartime, the Rosetta Stone has left the British Museum only once: for one month in October 1972, to be displayed alongside Champollion's *Lettre* at the Louvre in Paris on the 150th anniversary of the letter's publication.^[50] Even when the Rosetta Stone was undergoing conservation measures in 1999, the work was done in the gallery so that it could remain visible to the public.^[54]

Reading the Rosetta Stone

Prior to the discovery of the Rosetta Stone and its eventual decipherment, the ancient Egyptian language and script had not been understood since shortly before the fall of the Roman Empire. The usage of the hieroglyphic script had become increasingly specialised even in the later Pharaonic period; by the 4th century AD, few Egyptians were capable of reading them. Monumental use of hieroglyphs ceased after the closing of all non-Christian temples in 391 by Roman Emperor Theodosius I; the last known inscription is dated to 24 August 394, found at Philae and known as the Graffito of Esmet-Akhom.^[55]

Hieroglyphs retained their pictorial appearance, and classical authors emphasised this aspect, in sharp contrast to the Greek and Roman alphabets. In the 5th century, the priest



Horapollon wrote *Hieroglyphica*, an explanation of almost 200 glyphs. His work was believed to be authoritative, yet it was misleading in many ways, and this and other works were a lasting impediment to the understanding of Egyptian writing.^[56] Later attempts at decipherment were made by Arab historians in medieval Egypt during the 9th and 10th centuries. Dhul-Nun al-Misri and Ibn Wahshiyya were the first historians to study hieroglyphs, by comparing them to the contemporary Coptic language used by Coptic priests in their time.^{[57][58]} The study of hieroglyphs continued with fruitless attempts at decipherment by European scholars, notably Johannes Goropius Becanus in the 16th century, Athanasius Kircher in the 17th, and Georg Zoëga in the 18th.^[59] The discovery of the Rosetta Stone in 1799 provided critical missing information, gradually revealed by a succession of scholars, that eventually allowed Jean-François Champollion to solve the puzzle that Kircher had called the riddle of the Sphinx.^[60]

Greek text

The Greek text on the Rosetta Stone provided the starting point. Ancient Greek was widely known to scholars, but they were not familiar with details of its use in the Hellenistic period as a government language in Ptolemaic Egypt; large-scale discoveries of Greek papyri were a long way in the future. Thus, the earliest translations of the Greek text of the stone show the translators still struggling with the historical context and with administrative and religious jargon. Stephen Weston verbally presented an English translation of the Greek text at a Society of Antiquaries meeting in April 1802.^{[61][62]}

Meanwhile, two of the lithographic copies made in Egypt had reached the Institut de France in Paris in 1801. There, librarian and antiquarian Gabriel de La Porte du Theil set to work on a translation of the Greek, but he was dispatched elsewhere on Napoleon's orders almost immediately, and he left his unfinished work in the hands of colleague Hubert-Pascal Ameilhon. Ameilhon produced the first published translations of the Greek text in 1803, in both Latin and French to ensure that they would circulate widely.^H At Cambridge, Richard Porson worked on the missing lower right corner of the Greek text. He produced a skilful suggested reconstruction, which was soon being circulated by the Society of Antiquaries alongside its prints of the inscription. At almost the same moment, Christian Gottlob Heyne in Göttingen was making a new Latin translation of the Greek text that was more reliable than Ameilhon's and was first published in 1803.^G It was reprinted by the Society of Antiquaries in a special issue of its journal *Archaeologia* in 1811, alongside Weston's previously unpublished English translation, Colonel Turner's narrative, and other documents.^{H[63][64]}

Demotic text

At the time of the stone's discovery, Swedish diplomat and scholar Johan David Åkerblad was working on a little-known script of which some examples had recently been found in Egypt, which came to be known as demotic. He called it "cursive Coptic" because he was convinced that it was used to record some form of the Coptic language (the direct descendant of Ancient Egyptian), although it had few similarities with the later Coptic script. French Orientalist Antoine-Isaac Silvestre de Sacy had been discussing this work with Åkerblad when he received one of the early lithographic prints of the Rosetta Stone in 1801 from Jean-Antoine Chaptal, French minister of the interior. He realised that the middle text was in this same script. He and Åkerblad set to work, both focusing on the middle text and assuming that the script was alphabetical. They attempted to identify the points where Greek names ought to occur within this unknown text, by comparing it with the Greek. In 1802, Silvestre de Sacy reported to Chaptal that he had successfully identified five names ("Alexandros", "Alexandreia", "Ptolemaios", "Arsinoe", and Ptolemy's title "Epiphanes"),^ε while



Figure 9 | Richard Porson's suggested reconstruction of the missing Greek text (1803).

Archaeologia vol. 16 (1812), public domain



Åkerblad published an alphabet of 29 letters (more than half of which were correct) that he had identified from the Greek names in the demotic text.^[65] They could not, however, identify the remaining characters in the demotic text, which, as is now known, included ideographic and other symbols alongside the phonetic ones.^[65]

Hieroglyphic text

Silvestre de Sacy eventually gave up work on the stone, but he was to make another contribution. In 1811, prompted by discussions with a Chinese student about Chinese script, Silvestre de Sacy considered a suggestion made by Georg Zoëga in 1797 that the foreign names in Egyptian hieroglyphic inscriptions might be written phonetically; he also recalled that as early as 1761, Jean-Jacques Barthélemy had suggested that the characters enclosed in cartouches in

hieroglyphic inscriptions were proper names. Thus, when Thomas Young, foreign secretary of the Royal Society of London, wrote to him

A

α ... 𐀀 ... 𐀁 (alpha)	ϰ ... 𐀀 ... 𐀁 ... 𐀂 ... 𐀃
β ... 𐀄	τ ... 𐀄 ... 𐀅 ... 𐀆
γ ... 𐀇 (gamma)	π ... 𐀇 ... 𐀈
δ ... 𐀉 (delta)	φ ... 𐀉 ... 𐀊 ... 𐀋 ... 𐀌
ε ... 𐀍 ... 𐀎 (epsilon)	χ ... 𐀍
ς ... 𐀏	ψ ... 𐀏 ... 𐀐
η ... 𐀑 ... 𐀒 ... 𐀓 (eta)	ω ... 𐀑 ... 𐀒 ... 𐀓
θ ... 𐀔	ϣ ... 𐀔 ... 𐀕 ... 𐀖
ι ... 𐀗 ... 𐀘 ... 𐀙	ϣ ... 𐀗 ... 𐀘 ... 𐀙
κ ... 𐀚 ... 𐀛 ... 𐀜	ϣ ... 𐀚 ... 𐀛 ... 𐀜
λ ... 𐀝 ... 𐀞	ϣ ... 𐀝 ... 𐀞
μ ... 𐀟 ... 𐀠 ... 𐀡	ϣ ... 𐀟 ... 𐀠 ... 𐀡
ν ... 𐀢 ... 𐀣 ... 𐀤	ϣ ... 𐀢 ... 𐀣 ... 𐀤
ξ ... 𐀥 ... 𐀦 ... 𐀧 (xi)	ϣ ... 𐀥 ... 𐀦 ... 𐀧
ο ... 𐀨 ... 𐀩 ... 𐀪	ϣ ... 𐀨 ... 𐀩 ... 𐀪
π ... 𐀫 ... 𐀬 ... 𐀭	ϣ ... 𐀫 ... 𐀬 ... 𐀭
ρ ... 𐀮 ... 𐀯 ... 𐀰	ϣ ... 𐀮 ... 𐀯 ... 𐀰

about the stone in 1814, Silvestre de Sacy suggested in reply that in attempting to read the hieroglyphic text, Young might look for cartouches that ought to contain Greek names and try to identify phonetic characters in them.^[66]

Young did so, with two results that together paved the way for the final decipherment. In the hieroglyphic text, he discovered the phonetic characters "p t o l m e s" (in today's transliteration "p t w l m y s") that were used to write the Greek name "Ptolemaios". He also noticed that these characters resembled the equivalent ones in the demotic script, and went on to note as many as 80 similarities between the hieroglyphic and demotic texts on the stone, an important discovery because the two scripts were previously thought to be entirely different from one another. This led him to deduce correctly that the demotic script was only partly phonetic, also consisting of ideographic characters derived from hieroglyphs.^l Young's new insights were prominent in the long article "Egypt" that he contributed to the *Encyclopædia Britannica* in 1819.^j He could make no further progress, however.^[67]

B

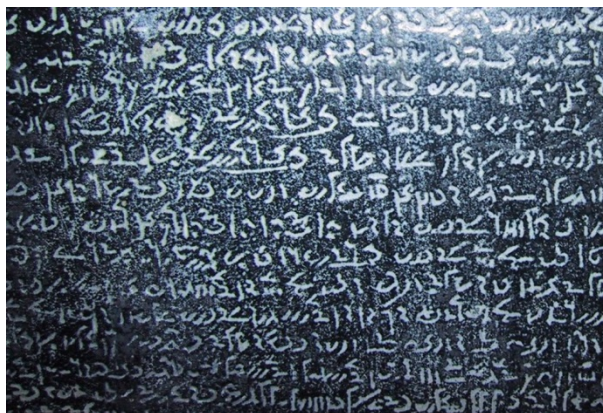


Figure 9 | A) Johan David Åkerblad's table of demotic phonetic characters and their Coptic equivalents (1802). B) Replica of the demotic texts.

J. D. Akerblad, public domain and Chris 73, CC BY-SA 3.0

In 1814 Young first exchanged correspondence about the stone with Jean-François Champollion, a teacher at Grenoble who had produced a scholarly work on ancient Egypt. Champollion saw copies of the brief hieroglyphic and Greek inscriptions of the Philae obelisk in 1822, on which William John Bankes had tentatively noted the names "Ptolemaios" and "Kleopatra" in both languages.^[68] From this, Champollion identified the phonetic characters *k l e o p a t r a* (in today's transliteration *q l i w p 3 d r 3 . t*).^[69] On the basis of this and the foreign names on the Rosetta Stone, he quickly constructed an alphabet of phonetic hieroglyphic characters, which appears in his famous 1822 "Lettre à M. Dacier" sent to Bon-Joseph Dacier, secretary of the Paris Académie des Inscriptions et Belles-Lettres and immediately published by the Académie.^k In the postscript Champollion notes that similar phonetic characters seemed to occur in both Greek and Egyptian names, a hypothesis confirmed in 1823, when he identified the names of pharaohs *Ramesse*s and *Thutmose*



Figure 10 | Champollion's table of hieroglyphic phonetic characters with their demotic and Coptic equivalents (1822).

Jean-François Champollion, public domain

written in cartouches at Abu Simbel. These far older hieroglyphic inscriptions had been copied by Bankes and sent to Champollion by Jean-Nicolas Huyot.^M From this point, the stories of the Rosetta Stone and the decipherment of Egyptian hieroglyphs diverge, as Champollion drew on many other texts to develop an Ancient Egyptian grammar and a hieroglyphic dictionary which were published after his death in 1832.^[70]

Later work

Work on the stone now focused on fuller understanding of the texts and their contexts by comparing the three versions with one another. In 1824 Classical scholar Antoine-Jean Letronne promised to prepare a new literal translation of the Greek text for Champollion's use. Champollion in return promised an analysis of all the points at which the three texts seemed to differ. Following Champollion's sudden death in 1832, his draft of this analysis could not be found, and Letronne's work stalled. François Salvolini, Champollion's former student and assistant, died in 1838, and this analysis and other missing drafts were found among his papers. This discovery incidentally demonstrated that Salvolini's own publication on the stone, published in 1837, was plagiarism.^O Letronne was at last able to complete his commentary on the Greek text and his new French translation of it, which appeared in 1841.^P Dur-

ing the early 1850s, German Egyptologists Heinrich Brugsch and Max Uhlemann produced revised Latin translations based on the demotic and hieroglyphic texts.^{QR} The first English translation followed in 1858, the work of three members of the Philomathean Society at the University of Pennsylvania.^S

Whether one of the three texts was the standard version, from which the other two were originally translated, is a question that has remained controversial. Letronne attempted to show in 1841 that the Greek version, the product of the Egyptian government under the Macedonian Ptolemies, was the original.^P Among recent authors, John Ray has stated that "the hieroglyphs were the most important of the scripts on the stone: they were there for the gods to read, and the more learned of their priesthood".^[71] Philippe Derchain and Heinz Josef Thissen have argued that all three versions were composed simultaneously, while Stephen Quirke sees in the decree "an intricate coalescence of three vital textual traditions".^[74] Richard Parkinson points out that the hieroglyphic version strays from archaic formalism and occasionally lapses into language closer to that of the demotic register that the priests more commonly used in everyday life.^[72] The fact that the three versions cannot be matched word for word helps to explain why the decipherment has been more difficult than originally expected, especially for those original scholars who were expecting an exact bilingual key to Egyptian hieroglyphs.^[73]

Rivalries

Even before the Salvolini affair, disputes over precedence and plagiarism punctuated the decipherment story. Thomas Young's work is acknowledged in Champollion's 1822 *Lettre à M. Dacier*, but incompletely, according to early British critics: for example, James Browne, a sub-editor on the *Encyclopædia Britannica* (which had published Young's 1819 article), anonymously contributed a series of review articles to the *Edinburgh Review* in 1823, praising Young's work highly and alleging that the "unscrupulous" Champollion plagiarised it.^{[74][75]} These articles were translated into French by Julius Klaproth and published in book form in 1827.^N Young's own 1823 publication reasserted the contribution that he had made.^L The early deaths of Young (1829) and Champollion (1832) did not put an end to these disputes. In his work on the stone in 1904 E. A. Wallis Budge gave special emphasis to Young's contribution compared with Champol-



Figure 11 | Replica of the Rosetta Stone, displayed as the original used to be, available to touch, in the King's Library of the British Museum.

Kacper Grabowski, CC BY-SA 3.0

um, an Ottoman house in the town of Rashid(Rosetta), the closest city to the site where the stone was found.^[79] In November 2005 Hawass suggested a three-month loan of the Rosetta Stone, while reiterating the eventual goal of a permanent return.^[80] In December 2009 he proposed to drop his claim for the permanent return of the Rosetta Stone if the British Museum lent the stone to Egypt for three months for the opening of the Grand Egyptian Museum at



Figure 12 | A giant copy of the Rosetta Stone by Joseph Kossuth in Figeac, France, the birthplace of Jean-François Champollion

Markus Bautsch, public domain

lion's.^[76] In the early 1970s, French visitors complained that the portrait of Champollion was smaller than one of Young on an adjacent information panel; English visitors complained that the opposite was true. The portraits were in fact the same size.^[50]

Requests for repatriation to Egypt

Calls for the Rosetta Stone to be returned to Egypt were made in July 2003 by Zahi Hawass, then Secretary-General of Egypt's Supreme Council of Antiquities. These calls, expressed in the Egyptian and international media, asked that the stele be repatriated to Egypt, commenting that it was the "icon of our Egyptian identity".^[77] He repeated the proposal two years later in Paris, listing the stone as one of several key items belonging to Egypt's cultural heritage, a list which also included: the iconic bust of Nefertiti in the Egyptian Museum of Berlin; a statue of the Great Pyramid architect Hemiunu in the Roemer-und-Pelizaeus-Museum in Hildesheim, Germany; the Dendera Temple Zodiac in the Louvre in Paris; and the bust of Ankhaf in the Museum of Fine Arts in Boston.^[78]

During 2005 the British Museum presented Egypt with a full-sized fibreglass colour-matched replica of the stele. This was initially displayed in the renovated Rashid National Museum,



Figure 13 | A replica of the Rosetta Stone in Rashid (Rosetta), Egypt

TheEgyptian, CC BY-SA 3.0

Giza in 2013.^[81]



As John Ray has observed, "the day may come when the stone has spent longer in the British Museum than it ever did in Rosetta."^[82] There is strong opposition among national museums to the repatriation of objects of international cultural significance such as the Rosetta Stone. In response to repeated Greek requests for return of the Elgin Marbles from the Parthenon and similar requests to other museums around the world, in 2002 over 30 of the world's leading museums — including the British Museum, the Louvre, the Pergamon Museum in Berlin and the Metropolitan Museum in New York City — issued a joint statement declaring that "objects acquired in earlier times must be viewed in the light of different sensitivities and values reflective of that earlier era" and that "museums serve not just the citizens of one nation but the people of every nation".^[83]

Idiomatic Use

The term *Rosetta stone* has been used idiomatically to represent a crucial key in the process of decryption of encoded information, especially when a small but representative sample is recognised as the clue to understanding a larger whole.^[84] According to the *Oxford English Dictionary*, the first figurative use of the term appeared in the 1902 edition of the *Encyclopædia Britannica* relating to an entry on the chemical analysis of glucose.^[84] Another use of the phrase is found in H. G. Wells' 1933 novel *The Shape of Things to Come*, where the protagonist finds a manuscript written in shorthand that provides a key to understanding additional scattered material that is sketched out in both longhand and on typewriter.^[84]

Since then, the term has been widely used in other contexts. For example, Nobel laureate Theodor W. Hänsch in a 1979 *Scientific American* article on spectroscopy wrote that "the spectrum of the hydrogen atoms has proved to be the Rosetta Stone of modern physics: once this pattern of lines had been deciphered much else could also be understood".^[84] Fully understanding the key set of genes to the human leucocyte antigen has been described as "the Rosetta Stone of immunology".^[85] The flowering plant *Arabidopsis thaliana* has been called the "Rosetta Stone of flowering time".^[86] A Gamma ray burst (GRB) found in conjunction with a supernova has been called a Rosetta Stone for understanding the origin of GRBs.^[87] The technique of Doppler echocardiography has been called a Rosetta Stone for clinicians trying to understand the complex process by which the left ventricle of the human heart can be filled during various forms of diastolic dysfunction.^[88]

The name has also become used in various forms of translation software. Rosetta Stone is a brand of language-learning software published by Rosetta Stone Inc., headquartered in Arlington County, US. "Rosetta" is the name of a "lightweight dynamic translator" that enables applications compiled for PowerPC processors to run on Apple systems using an x86 processor. "Rosetta" is an online language translation tool to help localisation of software, developed and maintained by Canonical as part of the Launchpad project. Similarly, Rosetta@home is a distributed computing project for predicting protein structures from amino acid sequences (or translating sequence into structure). The Rosetta Project brings language specialists and native speakers together to develop a meaningful survey and near-permanent archive of 1,500 languages, intended to last from AD 2000 to 12,000. The European Space Agency's Rosetta spacecraft was launched to study the comet 67P/Churyumov–Gerasimenko in the hope that determining its composition will reveal the origin of the Solar System.

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Because it originates as a Wikipedia page, this article betrays a preference for citing sources that are freely available on line and are thus more accessible to Wikipedia editors and readers. Thanks, therefore, to the creators of the wiki environment for this fruitful impulse, and equally to the peer reviewers, who, while recommending other improvements, also noted some recent sources that had been overlooked or under-emphasized because they are not available on line.



"Demotic" is often written with an upper-case initial, especially when referring to a linguistic stage or register of Egyptian. In this article "hieroglyphic" and "demotic" are both given lower-case initials because they are principally being used here to refer to the two scripts.

Competing interests

There is no conflict of interest.

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18. Tyldesley (2006) p. 194
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Timeline of early publications about the Rosetta Stone

- A : 1799: *Courrier de l'Égypte* no. 37 (2 Fructidor year 7, i.e. 1799) p. 3 Retrieved July 14, 2010 (see p. 7)
- B : 1802: "Domestic Occurrences: March 31st, 1802" in *The Gentleman's Magazine* vol. 72 part 1 p. 270 Retrieved July 14, 2010
- C : 1802: Silvestre de Sacy, *Lettre au Citoyen Chaptal, Ministre de l'intérieur, Membre de l'Institut national des sciences et arts, etc. au sujet de l'inscription Égyptienne du monument trouvé à Rosette*. Paris, 1802 Retrieved July 14, 2010
- D : 1802: Johan David Åkerblad, *Lettre sur l'inscription Égyptienne de Rosette: adressée au citoyen Silvestre de Sacy, Professeur de langue arabe à l'École spéciale des langues orientales vivantes, etc.; Réponse du citoyen Silvestre de Sacy*. Paris: L'imprimerie de la République, 1802
- E : 1803: "Has tabulas inscriptionem ... ad formam et modulum exemplaris inter spolia ex bello Aegyptiaco nuper reportati et in Museo Britannico asservati suo sumptu incidendas curavit Soc. Antiquar. Londin. A.D. MDCCCIII" in *Vetusta Monumenta* vol. 4 plates 5–7
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