

Development of Arabic Numerals

Modern Arabic (western)	1	2	3	4	5	6	7	8	9	0
Early Arabic (western)	1	2	٣	٤	٥	٦	٧	٨	٩	٠
Arabic letters used as numerals	ا	ب	ج	د	هـ	و	ز	ح	ط	ي
Modern Arabic (eastern)	١	٢	٣	٤	٥	٦	٧	٨	٩	.
Early Arabic (eastern)	١	٢	٣	٤	٥	٦	٧	٨	٩	.
Early Devanagari (Indian)		८	९	१०	११	१२	१३	१४	१५	
Later Devanagari (10th Century Sanskrit)	१	२	३	४	५	६	७	८	९	०

inventing the zero. Now the new system could show neatly the difference between XXX II (32) and CCC II (302).

If the origin of this new method was Indian, it is not at all certain that the original shapes of the Arabic numerals also were Indian. In fact, it seems quite possible that the Arab scholars used their own numerals but manipulated them in the Indian way. The Indian way had the advantage of using much smaller clusters of symbols and greatly simplifying written computations. The modern forms of the individual numerals in both eastern Arabic and western Arabic (European) appear to have evolved from letters of the Arabic alphabet.

The Semites and Greeks traditionally assigned numerical values to their letters and used them as numerals. This alphabetical system is still used by the Arabs much as we use Roman numerals in numbering paragraphs in contracts and legal documents.

The new mathematical principles on which the Indo-Arabic numerals were based greatly simplified arithmetic. Their adoption in Europe began in the tenth century after an Arabic mathematical treatise was translated by a Spanish scholar. Before long the system was being used in all European universities. Modern science owes a great debt to those imaginative Arab scholars.

Pamir and the upper Amu-Darya, Iran, Africa (consisting of Indian emigrants) and Syria (where the sectarians rallied to their leadership at the end of the 19th century).

BIBLIOGRAPHY.—M. J. de Goeje, *Mémoires sur les Carmathes*, 2nd ed. (1886); W. Ivanow, *A Guide to Ismaili Literature* (1933); M. G. Hodgson, *The Order of Assassins* (1935). (S. M. S.)

ISMAIL PASHA (1830–1895), hereditary viceroy of Egypt under Turkish suzerainty, was the second son of the vali Ibrahim Pasha (*q.v.*). Born in Cairo on Dec. 31, 1830, he was educated in Paris and on reaching manhood undertook various diplomatic missions in Europe for the viceroy Mohammed Said Pasha, whom he succeeded in 1863. Ambitious to increase his prestige he obtained from the Ottoman sultan in 1867 the hereditary title of khedive, an honorific borne by his successors until 1914.

Beyond his frontiers Ismail pursued an expansionist policy. In 1865 he negotiated with the sultan the cession to Egypt of the ports of Sawakin (Sudan) and Massawa (Eritrea). He modernized the Egyptian army with Remington rifles and Krupp artillery and enlisted a corps of American officers who established a general staff, explored the Sudan and in 1877 prepared a notable map of Africa. In 1870–75 he extended Egyptian authority down the Red sea coast, planting garrisons at Harar and Berbera, but his attempt to occupy Kismayu in 1875 was prevented by Britain. In 1869 he commissioned Sir Samuel Baker to annex parts of Uganda; in 1874 Darfur was added to the Egyptian dominions. Ismail's territorial ambitions were thwarted in Equatoria where Baker's successor, Col. (later Gen.) C. G. Gordon, withdrew the Egyptian outposts from most of Uganda in 1876 and in Ethiopia where two Egyptian armies were disastrously defeated in 1875–76.

Ismail's westernizing domestic policy greatly benefited Egypt. Primary education was expanded in the provinces. The legal disabilities suffered by Egyptians under the capitulations were lessened by the institution in 1876 of mixed courts. An astute landlord of his vast estates and an enthusiastic town planner, he created the modern Cairo and in 1869 granted Alexandria a municipality. The summoning of a legislative assembly in 1867 marked the first approach toward constitutional government. His most spectacular achievements lay in the development of communications. He extended the railways, nationalized the postal service in 1865 and in the Sudan introduced telegraphs in 1866 and a short railway in 1875. In 1869 he presided over the opening of the Suez canal with lavish ceremonies.

His projects were often brilliantly conceived but they were compromised by his financial prodigality. By 1876 the Egyptian public debt exceeded £100,000,000. Pressed by Ismail's creditors the powers intervened and set up a dual control with a commission of the public debt. Ismail's resistance to the resulting encroachments upon his independence, culminating in his dismissal of the European commissioners, led to his deposition by the sultan at the instance of the powers on June 26, 1879. Ismail died in exile at Istanbul on March 21, 1895. See also **EGYPT: History**.

See P. Crabitès, *Ismail, the Maligned Khedive* (1933); G. Douin, *Histoire du règne du Khédive Ismail*, 3 vol. (1933–41; unfinished).

(R. L. HL.)

ISMAY, HASTINGS LIONEL ISMAY, 1ST BARON (1887–1963), British soldier who served in World War II as chief of staff to the minister of defense, was born at Naini Tal, India, on June 21, 1887, the younger son of Sir Stanley Ismay. Educated at Charterhouse and at Sandhurst, he was commissioned in 1903 and joined the 21st cavalry (Frontier force), Indian army, in 1907. Service on the North-West Frontier of India (1908) and

ISMET INÖNÜ; see **INÖNÜ**, **ISMET**.

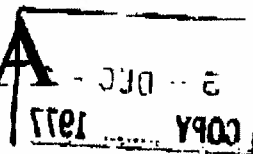
ISNEG (APAYAO), a Malayan-type people of northwest Luzon, Philippines. Isneg is a polological name, while Apayao is the district of the subprovince of Mountain province where they live. The Isneg numbered approximately 1960s. They are short in stature and rather probably through minor mixture with Negritism. They have a distinctive language, areas. The main body of Isneg lives on the river system which drains most of their territory. The southern Isneg lives on the Matala south of the subprovince. The Isneg economy is based on rainfall ("dry") cultivation of rice, corn and tilling gardens, supplemented by hunting, fishing and trading tobacco and other products to the lowlands. The Isneg settlements are of hamlet size, scattered along the edges of the dense rain forests of the region. Each hamlet is crisscrossed by marriage and kinship ties. The Isneg was noted for its head-hunting, with warrior trophies the principal means by which male status was gained, so that apart from a hamlet's friendly kinsmen all others tended to be enemies. Substantial wood houses with high pitched roofs in their rotating fields; they had distinctive architecture generally. Spanish missionaries worked up to the 18th century, but their converts were few. The lowlands; pacification was achieved by stabulary forces in 1908–13.

BIBLIOGRAPHY.—M. Vanoverbergh, *The Isneg*; M. Keesing, *Taming Philippine Headhunters* (1962); "Isneg: Shifting Cultivators of the Northern Philippines," *Journal of Anthropology*, vol. 18 (1962).

ISOCRATES (436–338 B.C.), a famous orator and politician at Athens, who by the artistic form of his speeches influenced many later writers. He was an Athenian citizen of the deme (to which he owned a flute factory and was rich enough to provide services to the state and to give his sons). Isocrates' teachers are said to have included Plato, but the details are uncertain. He must have known Socrates, although he does not appear to have been in the Socratic circle. Both sophistic and Socratic can be seen in his works. The family property was lost in the Peloponnesian War and, after the restoration of democracy in 404 B.C., Isocrates found it necessary to follow a career of infirmities prevented him from speaking in public and active part in political life. For about ten years he gave speeches for clients. It was an activity which he makes no allusion in his later works. He founded his famous school. It was high over 50 years attracted pupils from all parts of Greece. He died soon after the defeat of Athens by Philip at the battle of Chaeroneia in 338 B.C.

Speeches.—Isocrates' extant works consist of 12 speeches (logoi) and nine letters. "Speech" is a contraction of logos, but it is misleading. Only the six earliest are real speeches. It has been suggested that even the letters are exercises, but most scholars believe that they were by Isocrates, before he started his career as a lawyer to deliver in the law courts. The rest are probably

ENCYCLOPÆDIA BRITANNICA



VOLUME

12

P.684

*First Published in 1768
by A Society of Gentlemen in Scotland*



ENCYCLOPÆDIA BRITANNICA, INC.

William Benton, Publisher

CHICAGO · LONDON · TORONTO · GENEVA · SYDNEY · TOKYO · MANILA

NAVAL STATION LIBRARY
NORFOLK, VIRGINIA 23511



Date: 25 JAN 95

FACSIMILE COVER PAGE

TO

Name: MR JOHN MORRIS

Location: N. VIRGINIA

Telephone
Number: (703)

61 FAX Equipment
Number:

73

FROM

Name: SELIM

African & Middle Eastern Division / Near East Section (LA-128A)

Location: _____

Telephone
Number: () 202 / 707-5421

FAX Equipment
Number: ()

202 / 707-1724

IF THERE ARE PROBLEMS IN TRANSMISSION:

Please Call: _____ Telephone
Number: () _____

Messages (if any): _____

1 of 3 pages

~~Cardiac Assoc, 5124 1/2 Rd
Falls Ch.~~

~~703-850-2800~~

no preferred
provider
X

~~RT. 50
8316 Hol. Blvd
Suite 320
Yorktown Va
641-9161~~

L 80 - Islande

L 70 R-F 251 2012 707 5510
707 5000

Mid East

202-707-2235

Mr. Selin

5421

Date - 0725 1875
 2 June 1875 - May 26 1875
 (1281)

Piece named
 AT BARA

m...
 R... in
 NW-NESE
 flows into ...

Rubbing
 From
 breech of
 bronze
 rifled
 mountain
 howitzer
 ~ 80 mm
 c2. 1870's

John Morris
 703 602 1912
 ext 40

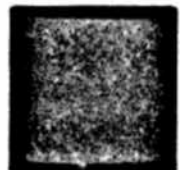
lost finelines
 here - not seen
 in rubbing

from calendar
 Feb 1875
 (1284)

m...
 (1296)

trans. to
 1875

* nonexistent
 element - delete



Rt. Trun.

(127)

= 226

Left Trun.

(87)

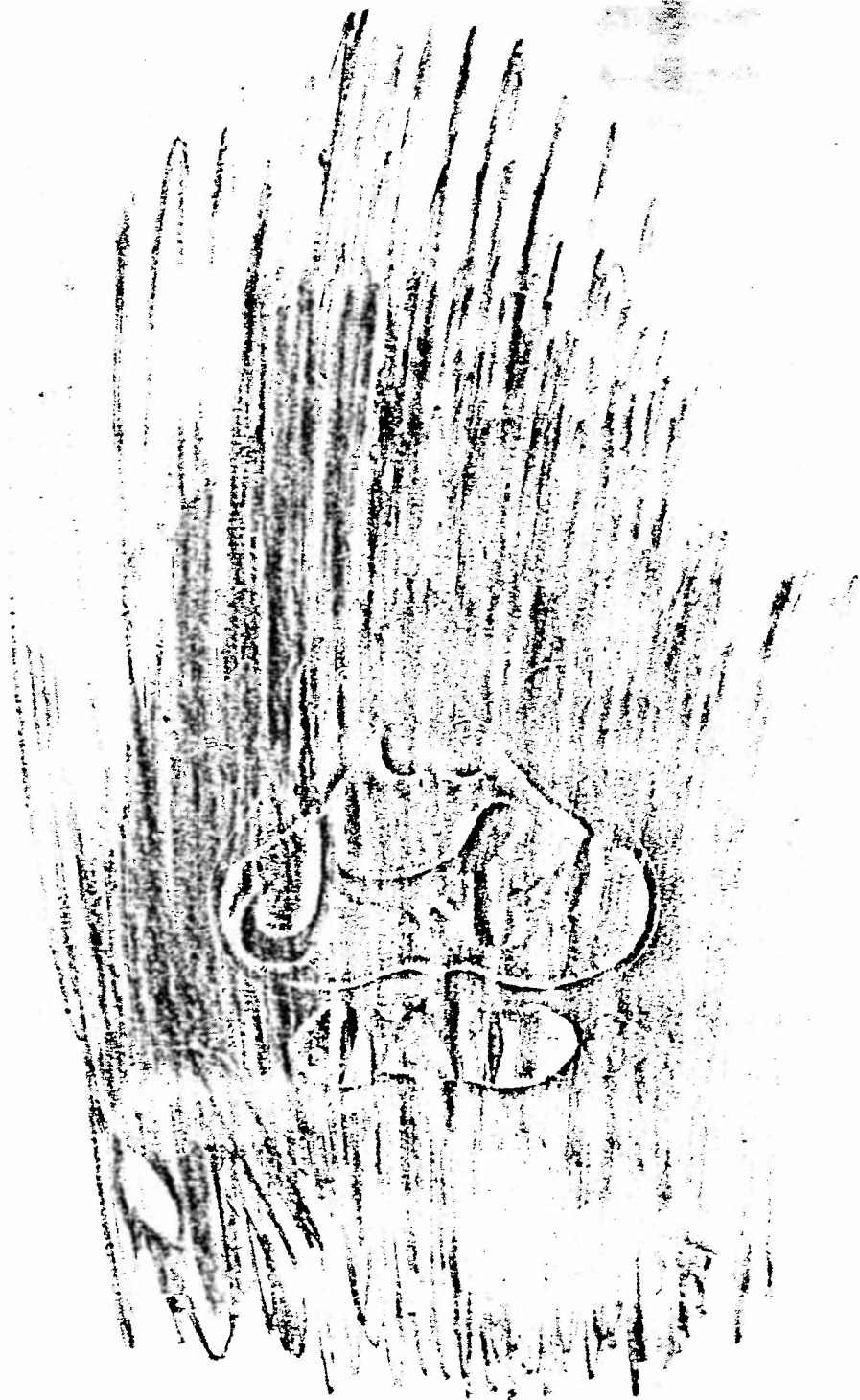
= 46?

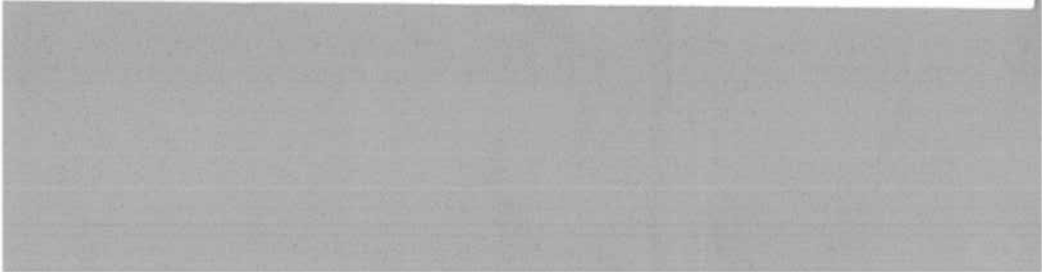
To: Mr. Selim

L & C New Eastern Sec.

202 707 ~~542~~ 1724

Nett Co Sec
Mr. Selma L. of C.
202 707-1724





1804 1865-1880

1246

u Khedive u = king, Sultan, ...
→ Ismael -

rules of Egypt

date: 1863-1882

1813 b.

1835 d.

Son,
Tewfik - Power in
1882
Bro. of Ismael
in 1879

1292 = 1875

DSN: 242-3611

OIL Army
Tech Manual Co

More info in
yellow spiral
notebook
"Gun Shows"