Printing and Translations under Muḥammad ‘Alī of Egypt

The Foundation of Modern Arabic

By J. HEYWORTH-DUNNE

Perhaps one of Muḥammad ‘Alī’s most remarkable achievements was the new direction he gave to the Arabic language and its literature. Until the beginning of the nineteenth century the use of the literary language had been confined to the needs of the mosque and the madrasahs attached thereto and, in a very limited way, to the antiquated scientific pursuits of a few of the ‘ulamā‘ of al-Azhar. The literary language was also used for a certain amount of the popular literature and by the poets. Persian was read by a few, especially those interested in literature. Most educated Turks knew the "three languages", al-lughāt ath-thalāth as they were called, i.e. Arabic, Turkish, and Persian. The Turk appears to have used Arabic for his faith, Persian for his literary taste, and Turkish for governing. Turkish was used for official purposes and there is ample evidence in al-Jabarti that there were many in Egypt who knew Turkish, but it was not until the period of Muḥammad ‘Alī that Egypt became Ottomanized in spite of the fact that it had been a part of the Turkish Empire for three centuries. One might have supposed that the sudden intensive use of the Turkish language would have ousted Arabic altogether and, normally, this would have occurred but for the scientific needs of the new ruler. Whereas the Turks favoured the purely military achievements of Muḥammad ‘Alī, they had very little inclination and no patience for supplying the scientific requirements of a modern army. It was due to the scientific indolence of the Turks in Egypt that Arabic gained an important place in this renaissance; the military achievements were ephemeral, the armies soon disappeared and were forgotten, but the ground covered by these early pioneers in the fields of linguistic
achievements was never lost. Arabic had, in any case, supplied the technical terminology of Turkish for centuries; on this ground it could hold its own quite easily and, although Arabic suffered through the destruction of the old madrasah-system, it gained immensely through the new needs of Muḥammad ʿAlī. At the end of the thirty years’ military and naval struggles of Muḥammad ʿAlī, Egypt, it is true, had not yet supplied literary history with any great names, but its language had certainly found new life. One of the chief instruments which helped in creating this new language was the printing press, and it is to this that we shall first turn our attention.

The first Arabic printed text to be used in Egypt was most likely the Missale Copto-Arabicum, edited in the College of the Propaganda in Rome in 1736 by Raphael Tuki (Ṭūkhi), a Copt, who had been sent to Rome from Tūkh when a child to be trained as a priest for the Roman Catholic Church.\(^1\)

There is evidence that the religious texts printed in the Lebanon were also in use in Egypt during the eighteenth century, for Chabrol noted that the Psalms in Arabic were read in some Coptic kutābās or elementary schools.\(^2\) There appears to have been an interchange of religious and cultural ideas between Syrian Christians, Franciscans, and Catholic Copts, especially from about the reign of ʿAlī Bey al-Kabīr (c. 1750); there was a large influx of Syrians into Egypt from this period and they probably brought their religious works with them.\(^3\) The first printing press to be used in Egypt was that brought to the country by Napoleon with the French Army; it was the press of the College of the Propaganda which Napoleon had confiscated on his way out to Egypt.\(^4\)

\(^1\) Ṭūkhi was the first Egyptian to be educated in Europe; other Copts were sent in the early part of the eighteenth century, vide Appleyard, Eastern Churches, London, 1850, p. 116, and Sonnini, Travels in Upper and Lower Egypt, London, 1799, vol. iii, pp. 122 and 173.


\(^3\) Vide especially Carali, as-Sūriyān fi Misr.

\(^4\) Ṭarrāzī seems to have thought that Napoleon brought the press from Paris; vide Taʾrīkh as-Sahāfat al-ʿArabiyah, Bayrūt, 1913, vol. i, p. 45.
He even brought the Maronite translators attached to the college, took them on the strength of the French Army with special rates of pay, and placed them at the service of J. J. Marcel, the director of the press. This press was supplied with type for printing Arabic, Turkish, Persian, Greek and other European languages, and of the twenty publications produced by the French only one could have been of any interest to the Egyptians, and that was a small treatise in Arabic on small-pox published in 1799, and casually described by al-Jabarti as lâ ba's bihā ĵī bābihā—"not a bad little treatise of its kind." ¹

There was another French press in Egypt under Marc Aurel, which he appears to have brought with him and which was later amalgamated with that under Marcel. Aurel edited the *Courier de l’Égypte* until it was taken over by Marcel. When the French withdrew from Egypt Marcel took the press back with him to France, where it was used for printing Oriental works.²

When Muḥammad ʿAlī became Governor of Egypt he began his reforms almost immediately, and appears to have realized the value of establishing a printing press. He had probably seen some of the printed works which came from Turkey (where they had had a press from 1728), Syria (where they had been printing religious works for over a century), and from France. To set up a printing press he must have had some idea of what he expected to publish. He appears to have borrowed his model from the works already printed in Turkey, as so far he had not a single translator or writer whose works he could publish. Having made up his mind to establish a number of important schools on modern lines, he soon realized the pressing need for large quantities of textbooks in Arabic and Turkish for teachers and students. The material which came from Turkey was insufficient and

¹ ʿAjaʿīb al-Āthār fī Tārājim waʿl-Akhhār, Cairo, 1879, vol. iii, p. 141.
out-of-date, and to make up for this deficiency, he set about collecting books with the keenness of a bibliomaniac. He sought books from every possible source from which information and learning could be derived for the enlightenment, education, and guidance of his officials and for the advancement of his many schemes. Many were acquired by ‘Uthmân Nūr-āddīn, his special favourite and right-hand man while he was in Europe, for he was sent there as early as 1809 and did not return until about 1816. While ‘Uthmân was in Italy and France he purchased books on every conceivable subject to the value of 50,000 roubles.¹ This was not the only source, for the officers who were ordered from France to join the Boyer military mission were requested to bring elementary texts connected with their special work.² There are further instances showing Muḥammad ‘Alī’s method in acquiring books from Europe and Turkey for use in his translation departments and schools; an order dated 5th Dhi’l-Ḵa’dā 1241 (11th June, 1826), instructed Boghos Bey about the distribution of books received from Europe; those connected with teaching and naval matters were to be sent to the Maktuṭ al-Jihādiyyah, i.e. the new Kāṣr al-‘Ainī Military School.³ It soon became known that Muḥammad ‘Alī was interested in the acquisition of books that would throw some light on European methods, for Drovetti, the French Consul-General, collected a large number of works from the Director of the Toulon Dockyards on nautical science, marine law, and shipbuilding for presentation to Muḥammad ‘Alī; on receipt of which he showed his gratitude by ordering Boghos to send a sword and a Kashmir shawl to the Director.⁴

¹ Cattaui, Le Régne de Mohamed Aly d’après les archives russes en Égypte, Cairo, 1931, vol. i, pp. 387–8. Another interesting example of this type of acquisition is quoted in The Times, the 4th July, 1818, column 4, where Muḥammad ‘Alī ordered 600 volumes of French works.
² Douin, Une Mission militaire française auprès de Mohamed Aly, Cairo, 1923, p. 23.
⁴ Ibid., p. 323.
An order dated 19th Rabi' II 1243 (9th November, 1827), to an agent in London shows Muhammad ‘Ali’s interest in naval matters, for he ordered a book about some new ships then being built in England; he was particularly anxious to find out the cost of building these vessels; he also ordered a number of copies of another book on elementary teaching.1 Another order dated 25th Shawwal 1244 (30th April, 1829), shows that an illustrated book on fortifications had been received from Constantinople.2 The Royal Archives in ‘Abdin Palace show us further instances of Muhammad ‘Ali’s method of acquiring books from abroad; an order dated 16th Safar 1241 (19th September, 1825) to Şâdiş Efendî in Constantinople asked for a copy of a work on surgery in Turkish.3 Tossizza sought books for Muhammad ‘Ali from Smyrna through some merchants.4

Brocchi’s visit to the Bûlâk School in 1822 shows that already there was quite a collection of European works in the School library, and also a number of Arabic and Turkish works printed in Constantinople.5

In the earliest stages, Muhammad ‘Ali appears to have brought three presses from Milan,6 while the ink, paper, and other materials were brought from Leghorn and Trieste7; at a later period the presses came from Paris, for Michaud and Poujoulat state that there were eight of them in use in 1831.8 The Oriental type was at first made in Italy and later

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2 Amin Pasha Sâmi, op. cit., p. 347.
3 Daftar No. 22, letter No. 202; it was called Şâfi Zâdah fi Fann al-Jirâbah.
4 Daftar No. 21, letter No. 2204, dated the 24th Rabî' I 1241 (6th November, 1825).
5 Brocchi, Giornale delle osservazioni fatte nei viaggi in Egitto, nella Siria e nella Nubia, Bassano, vol. i, pp. 160–1.
6 Ibid., p. 172.
8 Michaud and Poujoulat, loc. cit.
on in France; this early type is easy to recognize on account of its round shape and total disregard of the Oriental idea of beautiful calligraphy.\(1\) The need for type more in keeping with the rules of calligraphy and the taste of the Turks was soon felt, for they used to pay more attention to calligraphy than the Egyptians.\(2\) Soon after the press started its activities, Senglakh Efendi al-Farisi was appointed to assist ‘Uthman Nür-addin in the teaching of calligraphy, and was also charged with the task of engraving the matrices which were to be used in the press instead of those made in Europe.\(3\)

Senglakh’s work is excellent although his name is hardly ever mentioned; specimens of his engraving can be seen in many of the Bülāk publications; all the headings of chapters were printed in his \(ta‘līk\), called more popularly in Egypt \(al-khāṭṭ\; al-fārisī\), i.e. Persian calligraphy, but as the type was rather overworked, it is very difficult to appreciate his skill from some of the later editions; the best example of his work is the \(Diwān\; Muhiyyī-uddīn\; b. ‘Arabī, which is almost indistinguishable from a manuscript so well is it produced. It is generally described as an extremely beautiful edition, and is consequently a rare book.\(4\)

The Bülāk Printing Press appears to have been under

\(1\) Examples of this type can be seen in Don Raphael’s \(Kitāb\; as-Sībahah\), and in his Italian—Arabic Dictionary. Perron, in his article in the \(Journal\; Asiatique\), July-August, 1843, p. 19, writes regarding the type used in Constantinople: “Il est préféré partout à vos caractères européens qui, aux yeux des musulmans, sont trop larges, trop lâches et n’ont nullement l’allure orientale. On ne trouve de bien que le petit caractère arabe de l’Imprimerie royale de France. Tous les autres sont jugés détestables et sans grâce; leur seul aspect fait souvent refuser d’acheter les livres arabes imprimés en Europe.”

\(2\) Most of the best calligraphists, even in Egypt, have been of Turkish origin.

\(3\) \(Al-Hilāl\), op. cit., p. 199.

\(4\) Bülāk, 1854, \(vide\; Sarkis, \(Mu’jam\), p. 178. Senglakh’s art and skill were used in other fields; he did the beautiful inscriptions on the tombs of the ruling family in the \(Hosh\; al-Bāshā\), near the mosque of the Imām ash-Shāfi‘ī. Senglakh can be considered as the creator of a new school of calligraphy in Egypt.
the nominal directorship or inspectorship of ‘Uṯmān Nūr-addīn, although the Syrian, Nikūlā Musābīkī, who had been sent to Milan in 1815 for four years to learn type-founding and printing, appears to have been a kind of sub-manager; in addition to Senglākh Ef., several Azharīs were attached to the press in order to learn the art of printing, amongst the latter we have the names of Shaikh ‘Abdal-Bākī, who became head of the foundry, Shaikh Muḥammad Abū ‘Abdallāh, who became chief printer, and Shaikhs Yūsuf aṣ-Ṣanfī and Muḥammad Shahātah, chief compositors.

Nikūlā Musābīkī died in 1830, but even from 1821 there were several staff changes; ‘Uṯmān Nūr-addīn was still either acting as Director or Chief Inspector up to July, 1824; ʿKāsim Ef. al-Kīlānī became Maʿmūr from January, 1824, to September, 1832, and ʿAbdal-Karīm Ef. was Inspector from May, 1830, to March, 1835. These changes seem to suggest that Nikūlā was in a subordinate post while he was alive, and was probably in charge of the technical side of the work. The use of the title Maʿmūr suggests an administrative post, and in this capacity the official was probably responsible to Muḥammad ‘Alī for the satisfactory working of the enterprise. From April, 1833, the title of Nāzīr was introduced, and the first man to hold this post was Saʿīd Efendī until March, 1835; it was subsequently held by Fāṭīḥ Efendī from May, 1833, to October, 1836; in August, 1835, Ḥusayn Bey was Muḍīr, this again is another new title, and suggests a higher grade; although Ḥusayn Bey appears to have held that post until April, 1839, yet another, viz. Ḥasan Ef. was made Muḍīr from March, 1837 to 1844. This curious overlapping of dates might suggest that some of these officials were in charge of various departments of the press or were acting as locum tenens.

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1 Geiss, op. cit., p. 200.  
3 Al-Kīlānī also helped to make the taʿliḵ founts for the press; vide Takwīm an-Nīl, vol. ii, p. 401.  
In addition to the recorded visit of Michaud and Poujoulat in 1831, La Contemporaine also paid a visit the same year. She gives all the credit of the success of the enterprise to 'Uthmān Nūr-addīn, who is supposed to have suggested the idea to Muḥammad 'Alī, which is highly possible. She suggests that there was a need of more capable employees and better supervision. She reports on another printing press in the Citadel where the Wākāʾi Miṣriyah was published; this press occupied a number of rooms in which there was great activity. St. John, who visited the Citadel printing office in November, 1832, confirms that the Wākāʾi Miṣriyah was printed there, but states that it was "a small insignificant establishment"; he states that the presses and other equipment were "of a very inferior description", that there were few compositors at work, but they were, however, "rather expert and clever." The manuscripts from which they were working were written on one side, were well written, and the corrections were carefully made.

The best account of the Būlāk Printing Press is that written by Perron. According to the regulations drawn up at the request of the ruler, anybody could have a book printed by the press provided it was paid for. The costs were worked out on a time basis; if the book took three months to print, the editor had to pay the salaries of the various employees for the three months, plus the cost of materials to which was added 50 per cent of the total cost as profit for the government. Very few took advantage of these terms, and those who did depended on the export market to Constantinople rather than on the home market. There were possibly a few orders from North Africa.

3 Loc. cit.
4 Ibid., p. 18.
The press was established primarily to serve the needs of the schools and the training depots; government registers and stationery were also printed and prepared in the press, but after the Treaty of 1841 there was a considerable drop in the requirements for school and technical books. Illustrations for books were printed in the first place from blocks made in Paris, but they were also done locally in a lithograph press attached to the Būlāḵ establishment. Perron states that engraving had not yet been attempted in Būlāḵ up to 1842.

Perron’s list of works printed in the Būlāḵ Press between 1822 and 1842 is the best part of his study; it contains 243 items, the first being Don Raphael’s *Dizionario italiano e arabo* in one volume, but Brocchi states that the first book to be printed there was in Turkish for the use of the military training centres in Upper Egypt, and that an Arabic grammar and another book on military studies translated from the French into Turkish by a certain Scianisada [Shānī Zādah] were printed before the dictionary. Probably at the beginning there was no proper organization, and the books thus printed were done in a hurried and rough way for the sake of speed, and that when Perron came to make his study such works were not preserved in the Press so that he could take note of them. However, using Perron’s list as the best available indication of the work done during this period, the following is a classified list according to subject for the period 1822 to 1842; the period has been divided into two parts, the first 1822 to 1830, and the second 1831 to 1842:

1 Loc. cit.
2 Amln Pasha Sāmī, op. cit., p. 398.
3 Perron, loc. cit.
4 Ibid.
## Subject

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<th>Subject</th>
<th>1822-1830</th>
<th>1831-1842</th>
<th>Total</th>
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<td>T. 25</td>
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<tr>
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<td>A. 3</td>
<td>P. 6</td>
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<td>Botany</td>
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<td>3</td>
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<td>Education</td>
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### Totals

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<td>It.</td>
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<td>87</td>
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<tr>
<td>T.</td>
<td>125</td>
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<td>A.</td>
<td>111</td>
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<td>P.</td>
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<td><strong>Total</strong></td>
<td>243</td>
<td>187</td>
<td>430</td>
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**Notes.**—Reprints from works already published in Constantinople, 20. The work on Travel is the same one, the Turkish being translated from the Arabic (Rifā‘ah’s Riḥlah). Two of the Arabic works on religion are on the Jihād.

**Resume**

- **It.** = Italian-Arabic
- **T.** = Turkish
- **A.** = Arabic
- **P.** = Persian

It can be seen that the number of Turkish works exceeds that of the Arabic; most of the headings represent a com-
pletely new kind of literature as far as Egypt was concerned. It is significant that of the forty-eight works on military and naval subjects, thirty-nine were in Turkish, as the military profession was almost monopolized by the Turks; the military schools were essentially Turkish in character, and the Turkish language was the principal one used in them. Ten of the sixteen works on mathematics and mechanics were again in Turkish, because these subjects were generally adapted for instruction in the military schools. Fourteen of the fifteen works on medicine, however, were in Arabic because the Turks refused to take up medical studies; all the students of the Medical School were, in fact, Egyptians; the same thing applies to the Veterinary School, where eleven of the twelve works published were in Arabic. The remarkable number of Arabic grammars seems out of proportion with the total number of Arabic works, while the large number of Turkish collections of poetry indicates that Arabic poetry was not very popular with the ruling classes, although a good deal of this Turkish poetry was possibly edited for export to Turkey.

It is also worth noting that even most of the works on religious subjects (Muhammad, sufi-ism, etc.), were in Turkish (twenty to seven in Arabic); two of the Arabic works on religion dealt with the virtues of the Jihād and were probably used by the Imāms of the regiments. The items under belles lettres are again an indication of the tastes of the time, while the majority of the historical works were in Turkish. Most of the technical works on industry, engineering, geology, botany, geography, and agriculture were in Arabic because they were required by the Egyptian students for study.

Of the thirty-two headings under which these printed works are classified, no less than fifteen represent, if not entirely new subjects, then, at least, a new approach to them. Most of them are not the original works of Turks or Egyptians, but European works that were translated into Turkish and Arabic, and it would be useful at this stage to
endeavour to give an outline of the method used for the solution of the important problem of the provision of textbooks for the schools and, incidently, how Arabic was developed as a medium for dealing with modern science.

Attempts to create technical vocabularies for modern needs had been made in Constantinople from about 1780, and the work done in Egypt under Muhammad 'Ali was really only an extension of what had already been started in Turkey. As a proof of this we know for a fact that twenty of the early Bulâk editions were reprints of works done in Constantinople, four of which were dictionaries. Amongst the more important translators in Constantinople can be mentioned the names of Ûsain Rifki, Maḥmūd Ef., and ‘Abdar-Raḥmān Ef., who were connected with the École de Génie as teachers of mathematics. The most celebrated, however, was Ishâḳ Ef., who flourished under Maḥmūd II; he was a Jew who had embraced Islam and was called the “father of Turkish technology”, for he became the leader of the new scientific movement. He knew Turkish, Arabic, Hebrew, Persian, Greek, Latin, and French, and wrote or translated eleven works on mathematics, physics, chemistry, and other subjects in which he introduced a new technical vocabulary; he was also connected with the École de Génie, where he was a professor and then its director.

1 Nos. 3, 5, 12, 13, 14, 30, 34, 39, 50, 52, 53, 63, 76, 86, 91, 96, 101, 119, 212 of Perron’s list.
2 Hammer, *Codices Arabicos, Persicos, Turcicos, bibliothecae Caezaroe regio palatiniae Vinobonensis*, Vienna, 1920; this list of works published in Constantinople between 1728 and 1820 is of interest. Hammer gave further information in his *Histoire de l’Empire Ottoman*, translated by Hellert, Paris, 1839, vol. xiv, pp. 492–501, which brought it up to 1830. About one hundred works were produced altogether, 10 dictionaries, 20 religious works, 15 history, 13 grammar, 1 medicine, 8 geometry, 1 mathematics, 1 magnetism, 2 nautical science, 3 administration, 2 logic, 1 philology, 1 rhetoric, 2 literature, 1 philosophy, 3 jurisprudence, 1 astronomy, 4 calendars, 2 geography.
Turkish school which served as a model for the Turks in Egypt for, apart from the Turkish works which were reprinted in Cairo, we have evidence of the acquisition of other works which were not reprinted.¹

Adham, who had studied at the École de Génie, became one of Muḥammad ‘Alī’s most ardent supporters in Egypt and translated two works into Turkish from French, one on mechanics and the other on geometry. ‘Uṯmān Nūr-addīn drew up the code of discipline for the Navy in Turkish while Aḥmad Khalīl prepared the Military Codes. It is not certain whether Aḥmad Khalīl came from Constantinople or whether he was a member of an early education mission to Europe, but the early date of his published work suggests that he came from Constantinople. Jacovaki Argyropoulo and Ḥasan Ef. translated historical works into Turkish from the French, the former translated Castera’s Histoire de l’impératrice Catherine II de Russie, and the latter, Botta’s Histoire d’Italie; the second edition of the former work was reviewed and corrected by Sa’dallah Ef. Rifā’ah’s Rihlah was also turned into Turkish from Arabic by Rustum Ef.

The names of the authors and translators of many of the Turkish and Arabic works are not given in Perron’s list and most of the works are very hard to find as their educational value has long ceased to exist, and a suitable public library where they could have been preserved was not established until too late. A few of the military books exist in the Cairo Library, but they are not the best specimens for linguistic research, and in any case they are not catalogued. The translation service in Egypt was not systematically organized; the Arabic work started between 1816 and 1820, and one of the first to translate from European languages into Arabic was Don Raphael.² His Italian–Arabic Dictionary mentioned

above consisted of 270 pages in two parts, the first part containing the vocabulary (200 pages) and the second part (70 pages) containing a classified vocabulary to facilitate the learning of Italian and reference. Don Raphael also translated into Arabic Macquer's *L'Art de la teinture en soie* and Machiavelli's *Principe*; the latter is not published but is preserved in manuscript form in the Cairo Library. A French medical work by Vacca was translated into Arabic and published in 1826 in two volumes; it was probably done by Don Raphael as there was no Egyptian or Turk capable of doing such work at this early date.¹ Don Raphael had been transferred from the Būlāk School to the Medical School, where he was employed as a translator and teacher of physiology ²; Gaetani, who had been a student of Vacca, also taught physiology in the Medical School, a fact which might indicate that Raphael was responsible for this translation in collaboration with Gaetani.

Although some work had been done in Constantinople on technology and though the school of translators under Ishāk Efendi had given the Egyptian school a good lead, there was still much to be done, especially in view of the fact that the Egyptians attempted a much larger field than the Turks. A great deal had to be done to find suitable men; but in the initial stages 'Uthmān Nūr-addīn, a first-rate all-round man, did all he could to solve the difficulties; he appears to have received some help from the young Arabist, Koenig.³ One of Muḥammad ‘Ali's greatest problems was

¹ Called *fī uṣūl al-‘ulum at-fībbiyah*, Perron’s list, work No. 21.
² Bachatly, op. cit., where he gives an excellent account of Don Raphael’s life.
to find the right type of educated man to perform the task of translating European works into Arabic and Turkish. He endeavoured to solve the linguistic difficulties by ordering his Turkish officials to learn Arabic in order to do without interpreters,¹ but in spite of that order he made Turkish the official language in the very schools which produced these officials. He tried to make the European professors in the School of Medicine learn Arabic in order to do without interpreters and intermediaries, but they refused on the ground that they had come to Egypt to serve as doctors and to teach medicine and not to learn Arabic.² With a view to making the most of some of his foreign officials, Muhammad 'Ali gave orders that each should have a clerk or interpreter in his employ who should do nothing else but translate European books into Arabic or Turkish for use in the services or the schools.³ Arabic military books were translated from the Turkish with no attempt to create a new set of Arabic military technical terms, for the Turkish ones were used and were continued in use until very recently. Egyptians who were employed in the Bülak Printing Press had to learn Turkish in order to fulfil their tasks properly.

When it was decided to take up non-military studies such as medicine, botany, chemistry, physics, etc., for Egyptian students, it was realized that a more determined and systematic attempt had to be made to create technical vocabularies in order to enable the translators to cope with the technical terms they found in the European works.

¹ Royal Archives, Daftar No. 6, Document No. 702, dated the 7th Dhi’l-Hijja 1236 (4th September, 1821).
² Daftar No. 61, letter No. 281, dated the 28th Rajab 1251 (20th November, 1835).
³ Daftar No. 16, letter No. 92, dated 16th Rabi’ I, 1239 (20th November, 1823), where Giovanni was ordered to translate medical works in this way; vide also Takwim an-Nil, vol. ii, pp. 427 and 434, where Kiani Bey and Hasan were attached to Sulaiman Pasha to translate a work on manoeuvres which he had compiled from various sources; for other references of this kind, vide ibid, pp. 396, 406, 425, 448, and 455.

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While the Būlāk Printing Press dealt with a great number of the works which had to be published, Muḥammad ‘Alī wisely gave to some of the more important schools lithograph presses of their own on which they could print the technical works which the staff and students had translated for their own use. The Military Schools at Ṭurā and al-Gızah, the Medical and the Engineering Schools were all provided for in this way. The Military Schools with Turkish as their principal language had not the same obstacles to overcome as the Medical and Engineering Schools, which had to create an entirely new technical language before they could attempt to put their studies on a sound basis.

The teaching method employed in these Schools shows the extent of the difficulties to be solved; the teachers prepared their lectures in a European language, either French or Italian; these lectures were then translated into Arabic by one of the interpreters on the staff of the school who, after checking the work with the European teacher, read it out to the students in class. Amongst these early translators or interpreters we find the names of several Syrians but no Egyptians. Besides Don Raphael, who knew Italian and French, there was Ḥanna (or Yohanna) ‘Anḥūrī who knew Italian, but as many of the books he translated were in French, they had to be put into Italian for his benefit before he could translate them into Arabic. ‘Anḥūrī worked in the School of Medicine with Clot Bey, Perron, and others; seven translations into Arabic are attributed to him. Yusuf Firā‘aun was another Syrian who worked in the Veterinary School under Hamont; he knew French and could translate into Arabic without any intermediary. He appears to have been able to translate into Turkish as well; twelve translations are

attributed to him. We meet also the names of Georges Vidal, Augustus Sakākīnī, and Ya‘ḳūb, all Syrians who helped in this task of building up this new Arabic literature.

One of the first books to be printed in the School of Medicine at Abū Za‘bal was Clot Bey’s al-Kāul aṣ-Ṣarīḥ fī ‘Ilm at-Tashrīḥ (on anatomy) in 1832; between 1832 and 1849 over fifty works connected with medical and scientific subjects were translated into Arabic by the Staff of the School of Medicine, forming over ninety volumes, but not all of them were printed. The above work is attributed to Clot Bey, which at once raises the question regarding the actual translator of this work. Clot Bey certainly could not translate into Arabic. The only European on the staff who might have known Arabic well enough to translate into that language was Perron, who is also credited with having translated medical and scientific works into Arabic, but this suggests a system which did not exist, as very few of the translations could be attributed to anyone as his own work.

The method employed in translating these works is interesting and makes the task of textual criticism rather difficult. The teachers, it is true, produced some kind of work in their own language which was passed on to the translators (‘Anḥūrī, Fira’aun, Sakākīnī, Vidal, or Ya‘ḳūb), who, with the help of the original writer, translated the work into Arabic. The main task of the translator seems to have been to achieve a readable version for class use, but not good enough for publication. Before the work could be accepted by the press, it had to be reviewed by an editor (muharrir) whose duty it was to correct the translation and to check over the technical terms; the invention of the terms was often left to the translator, but the muharrir had the task of advising on their suitability according to the standards of the Arabic language. The muharrir’s version was then checked by a corrector.

1 Zaydān, op. cit., vol. iv, pp. 188 and 191; also Sarkīs, op. cit., p. 1567. Vacca’s work is not mentioned by Clot Bey.
(muṣaḥḥīḥ), whose duty it was to see that the whole work was written in good literary Arabic; both editors and correctors were shaikhs of al-Azhar; their tasks were not always distinguished. The creation of these technical terms and new turns of phrase in the School of Medicine must be considered one of the most important contributions to learning during the whole of the Muḥammad ‘Alī period, if not the nineteenth century. The lack of such terms, or, rather, the ignorance of the Arabic equivalents of European terms was, indeed, a great obstacle, and the way it was overcome was remarkable.

Credit has always been given to the translators, whether they were the original Syrians or the later efendis who graduated from Muḥammad ‘Alī’s schools or European universities, but hardly anything is ever said about the Azhari shaikhs, who were men of sound Muslim erudition who had kept up the tradition of Muslim learning and were well versed in Arabic and in its old scientific literature. The reason for selecting such men was not in order to give the work the sanction of the competent linguistic authorities; there was no one else available who had the required knowledge of the Arabic language. All these muḥarrirs and muṣaḥḥīhs were in a position of inferiority in the schools in which they worked. Among these editors and correctors the name of Muḥammad ‘Imrān al-Hirrāwī is met with very frequently; for example, he edited the work entitled al-Ḵāl aš-Šarīḥ fī ‘Ilm at-Tashrīḥ attributed to Clot Bey and translated by ‘Anhūrī 1; al-Hirrāwī also edited Sakākīnī’s work, but he co-operated mostly with ‘Anhūrī. Al-Hirrāwī occasionally clashed with Clot Bey, and once he was severely reprimanded by Muḥammad ‘Alī on account of his disagreeable conduct.2

Muṣṭafā Ḥasan Kassāb was another editor who used to

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1 Sarkīs, op. cit., p. 1567, and Zaydān, op. cit., vol. iv, p. 205. The work appears to have been Begin’s Éléments de Chirurgie, with some additional notes by Clot Bey.
co-operate with Fira‘aun, but the most important figure of this group was Shaikh Muḥammad ‘Umar at-Tūnisi (pronounced Tunsī) (d. 1857). He was born in Tunis of an Egyptian mother whom at-Tūnisi’s father had married while he was a student in the mosque of al-Azhar. Shaikh Muḥammad made a voyage to the Sūdān and wrote an excellent account of it, a work which was translated into French by Perron. On his return to Egypt he joined al-Azhar, and eventually found employment in the Egyptian Expeditionary Force to Morea under Ibrāhīm Pasha. At the end of this campaign, he was appointed on the staff of the School of Medicine as an editor. His specialities were language, literature, and the traditional scientific works, and it was due to his excellent example that the rest of the translators and efendīs were able to combine their efforts and to form a kind of Arabic Academy where they co-operated to find the proper Arabic equivalents of the European technical terms or to coin new ones; at-Tūnisi’s knowledge, taste, and judgment always gave him the place of authority in this sphere.

At first this task was confined to the translations in hand and the technical terms used in a particular work were collected into a glossary which was printed either at the end or at the beginning of the text. In due course, however, when the translating and editing staff gained sufficient experience and confidence in themselves, they began to attempt more ambitious tasks, one of which was the translating of Nysten’s medical dictionary in one volume and then Fabre’s *Dictionnaire des Dictionnaires de Médecine* in eight volumes. This excellent work eventually served as the work of reference for all the technical needs of the School of Medicine; it was called *Kitāb ash-Shudhūr adh-Dhahabiyah fīl-‘Alfāz al-Ṭibbiyah*, and included medical, botanical, zoological, and other scientific

1 Zaydān, op. cit., vol. iv, p. 206.
2 Ibid.
terms. Clot Bey had the dictionary sent from France and divided it among the scholars under the chief editorship of at-Tūnisī.1 By this time several of the Egyptian medical students had returned from Paris and were able to co-operate with at-Tūnisī and his colleagues; they were Ibrāhīm an-Nabārāwī, Muḥammad ‘Alī al-Bākli, Muḥammad ash-Shāfī’ī, Muḥammad ash-Shabāsī, Muṣṭafā as-Subkī, ‘Isawi an-Nahrāwī, as-Sayyid Aḥmad ar-Rašīdī, Ḥusain Ghanīm ar-Rašīdī, and Ḥusain ‘Alī. By the time the task was finished, Perron was director of the School, and he ordered the compilers to collect similar technical terms from Arabic dictionaries, philological works, and treatises on science; included among the latter at-Tūnisī gives the name of the popular Tadhkirat Dā‘ūd 2; he also added the names of the drugs which he had collected while he was in the Sūdān. The terms were all arranged in alphabetical order according to the European system, and carefully checked by at-Tūnisī with the help of Muḥammad ash-Shāfī’ī, who was sub-director of the School at the time.

Unfortunately, with the breakdown of Muḥammad ‘Alī’s system and the subsequent loss of interest taken in medical studies, the Arabic dictionary, the labour of so many Egyptian scholars, was taken away by the disappointed Clot, who presented it to the Bibliothèque Nationale in Paris on the 9th September, 1851. It may have been fortunate for the dictionary to have found a home in Paris as it would have been lost in Cairo. It is sad that at-Tūnisī’s work has been so neglected. Even the present Director-General of the School of Medicine in Cairo, who is a collector of old medical works and theses of early Egyptian medical scholars, knew nothing about this valuable dictionary until the present writer pointed out its importance in March, 1936. Muḥammad Bey Sharaf, the compiler of An English-Arabic Dictionary of Medicine, Biology, and Allied Sciences, made no attempt to use

1 p. 3 of manuscript in my possession.
2 Ibid., p. 4.
this work although two photographic copies were then in existence in the Cairo Library.

The contents of this dictionary have been examined with various Egyptian medical scholars and scientists, who have all appreciated the skilful manner in which at-Tūnisī and his colleagues endeavoured to solve their difficulties. Two other names must be mentioned in connection with the collecting of the technical terms from Arabic sources, viz. Shaikh Sālim ‘Awād, a musāḥḥih, and Shaikh ‘Alī al-‘Idwī. It is most significant that this work was the outcome of the combined labours of the best of the old Azhari school, and the pick of the new generation of Azhari students who had been made to join the School of Medicine by Muḥammad ‘Alī and then sent to France to complete their studies.

Another well known musāḥḥih was Shaikh Ibrāhīm ad-Dasūqī; he was an Azhari and was first of all employed in the School of Medicine with al-Hirrawī; from there he was transferred to the School of Engineering as the Chief musāḥḥih where he became responsible for a large number of the corrected versions of the books on mathematics; this shaikh became the friend of Lane and helped him with his great work on lexicography.¹ Other well-known musāḥḥiḥs were Shaikh Muḥammad Muḥarram, who generally worked with an-Nabarāwī; Shaikh Ḥusayn ‘Abdallāh al-Iṣnāwī, who specialized in correcting works on anatomy; Shaikh Khalīl al-Ḥanafi, who had a good knowledge of Arabic technology; Shaikhs ‘Abdullāh al-Raḥmān al-Ṣaftī, Muḥammad Hudhud, Muḥammad ‘Ayyūd al-Ṭanṭāwī, and ‘Abdallāh al-Mun‘īm al-Girgāwī who worked in the School of Medicine from November, 1832.² Even after the return of the technical men from Europe, these shaikhs still continued their work of editing, as it was rightly considered highly specialized work. These Egyptians gradually formed an important school of translation which superseded the original Syrian group.

¹ Paton, op. cit., p. 268.
The Egyptian medical scholars turned out a huge amount of material for correction; they often translated the works of the European teachers in Cairo, as some of their lectures were specially adapted to the particular conditions of the country, but a great many important medical works of European scholars were translated for reference in the School or for use as text-books. Ahmad Hasan ar-Rashidī appears to have been about the only scholar who could be relied upon to turn out a correct text without the aid of a corrector; he was very thorough and is credited with eleven major works; he even acted as a musahhih for his colleagues who had not his talents for writing Arabic; he certainly corrected the work of Ali Haibah and translated Clot's works on gynaecology and dermatology. Ar-Rashidī's 'Umdat al-Muḥtāj fi 'Ilmai'l-Adwiyyah wa'l-'Ilāj in four large volumes, published posthumously in 1866, indexed by Dr. Husain 'Audah, is a medical encyclopædia of great value which is much sought after all over the Arabic-speaking world.

Muḥammad 'Alī al-Baklī translated four works on surgery, three of which were published; al-Baklī was engaged on two other important works on legal and political terms, but he died before finishing them; he was the founder and joint editor of the Medical Journal called Ya'sūb at-Ṭibb, established in 1865; the other editor was Lane's friend, Shaikh Ibrāhīm ad-Dasūkī. Muḥammad ash-Shāfī', whose work was reviewed by at-Tūnīsī, had four of his translations published; his as-Sīrāj al-Wahhāj fi't-Tashkhis wa'l-'Ilāj and Aḥsan al-Aghrād fi't-Tashkhis wa Mu'ālajat al-Amrād became standard works and were of an encyclopædic nature, each of them containing four large volumes. Ash-Shabāsī had two works published on anatomy, an-Nahrāwī only one on the same subject. Hasan Ghanim ar-Rashidī wrote a volume on pharmaceutics and collaborated with at-Tūnīsī on the translation of Figari's work on botany. Other translators were Muḥammad 'Abdal-Fattah, who is credited with eight works, mainly on veterinary science; some of his work was
corrected by Kassāb; 'Alī Ḥaibah translated two works on physiology and a third on maternity; in the works on physiology, he was helped by 'Anḥūrī and Muḥammad Muḥarram and then corrected by Ibrāhīm ad-Disūkī; ar-Rasḥūdī corrected the work on maternity. Aḥmad Nadā is credited with eight works on botany, geology, zoology, agriculture, and chemistry. Aḥmad Bākhīt also worked with Clot Bey, although there is no record of any published work; Ḥasanain ‘Alī, ‘Uṭḥmān Ibrāhīm, Muṣṭafā as-Subkī, Ḥusain ‘Auf, Muṣṭafā al-Wāṭī, Bādāwī Śālim are all supposed to have collaborated with Clot Bey on the production of medical works, but few of them were published.

Two other schools contributed considerably towards this new scientific and literary movement, viz. the School of Engineering and the School of Languages, whose teachers produced a large number of works on mathematics, astronomy, geodesy, and allied subjects. The most important figures were Rifa‘ah Badāwī Rāṣī‘ at-Ṭaḥṭāwī,1 Muḥammad al-Bayyūmī, Ibrāhīm Ramadān, and Muṣṭafā Bahjat. Muḥammad al-Bayyūmī had five works on algebra, geometry, and trigonometry published in the Būlāk Printing Press,2 Ibrāhīm Ramadān also had five works published on geodesy and geometry, three by the Būlāk press and two by the School of Engineering press. Muṣṭafā Bahjat’s speciality was map-making; several of his maps are preserved in the Ministry of Public Works in Cairo. Amongst the other translators, the name of ‘Iṣmat might be mentioned; he specialized in translating Turkish works into Arabic.

The same method of correcting the translations was in use at these two schools but there was no combined effort made to compile a dictionary of technical terms. As an example of this method Ramadān’s Takḥīt al-Arādī,3 translated from the French by the order of Adham, was

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1 Vide BSOS., vol. ix, part 4, and vol. x, part 2.
2 Sarkīs, op. cit., p. 622.
3 Būlāk, 1844.
corrected by Shaikh Ibrāhīm ad-Dasūkī, then compared and checked with the original work by Abu’s-Su‘ūd Efendi; it was checked a second time by al-Baiyūmī, and still a third time in the press by Ḥasan Ef. al-Jubaili. The Arabic of as-Sayyid ‘Imārah ‘Abdal-‘Āl’s Kūţāb Tahdhib al-‘Ībārāt fī Fāmn ʿAḥđāh al-Misāḥāt on surveying was corrected by Shaikh Muḥammad ʿUṭṭah al-Idwī; the technical terms were reviewed and corrected by al-Baiyūmī with the help of Rifā‘ah. Al-Baiyūmī’s Kūţāb ʿĪlm al-Jabr (algebra) was corrected by Shaikh Ibrāhīm ad-Dasūkī. The translators often collaborated in order to produce scientific works; both Ramaḍān and Manṣūr ʿAzmī produced an Arabic version of a work on applied geometry and al-Baiyūmī with ʿAḥmad Ṭawīl produced another on mechanics. The following names also figure in this huge task of the creation of a new scientific language: ʿAḥmad Daḵalāh, ʿAḥmad Fāʿīd, ʿAḥmad Ṭā’il (or Ṭawīl), ‘Alī ʿIzzat, ʿĀmr Saʿd, Ḥusain ‘Alī ad-Dīk, Muḥammad ash-Shāmī, ‘Alī Badawī, and Maḥmūd ʿAḥmad. Pellissier states that the lithograph press of the School of Engineering turned out about twenty-five works in Arabic, among which he mentions Despretz’s Familles chimiques, Olivier’s Géométrie descriptive, Bouée’s Géologie, and Françon’s Astronomie and Géodésie; Bowring gives the names of twenty-three French works, some of which were translated and others about to be translated by the staff of the School of Engineering.

The School of Languages produced something like seventy translators and writers between 1836 and 1846 under the very able direction of Rifā‘ah. This institution must be considered as the most important from the purely literary point of view, for it produced the first translation of books on French law, particularly commercial law, and excellent

1 Abu’s-Su‘ūd was one of the leading figures of his time; he was the editor of the Wādī an-Nīl, established in 1866.
2 Pellissier, op. cit., p. 7.
versions of well known French works on history, geography, philosophy, mineralogy, education, and some French classics. As examples of the quantity of works turned out the following names are sufficient: Rifā'ah had over thirty works published, Șāliḥ Majdī and Abū's-Suʿūd published nine each, Khalīfah Maḥmūd produced five, Muḥammad Ḥadrī had six works published, while ʿUthmān Jalāl had ten to his credit. In addition to these famous names in Modern Arabic literature, we must not forget that the poet, Ibrāhīm Marzūk, was educated under Rifa'ah in this school, and that both Abū's-Suʿūd and ʿUthmān Jalāl were amongst the first newspaper editors and proprietors in the country.

The last years of Muḥammad ʿAlī's reign were not very productive in literature and translations and during the reigns of ʿAbbās I and Saʿīd, the literary effort was almost confined to ʿAlī Mubārak. It was not until the reign of Ismāʿīl Pasha that literature and science began to receive the fuller attention and appreciation of the people, especially the Azharīs, to some extent through the encouragement of the ruler but mainly through European example and increased contact with Europe. Between 1863 and 1879, Europeans opened about one hundred and thirty schools in Egypt; this alone should have had a very serious influence on the social and cultural life of the Egyptians. The Egyptian Government opened a number of schools and private individuals established Arabic newspapers and periodicals, and the need felt for modern books brought to light the literary and scientific achievements of the Muḥammad ʿAlī period, when the people were better able to appreciate it and to consider it as something not necessarily bound to a military system. If it had not been for the heavy work done during this early period, education and literature would not have made the progress they did under Ismāʿīl Pasha.

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