

ARABIC AS A MEDIUM OF INSTRUCTION IN ANATOMY

(The Language of Anatomy)

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Several thousand words which amount to a new language are necessary for any medical student to know in order to learn his Anatomy. These words are largely derived from Latin and Greek, and as these two languages are not taught nowadays, it becomes difficult, even for Anglo-Saxon students of Anatomy to comprehend (and finally memorize) most of these terms. For this reason, many of the Anatomy Textbooks include a « glossary » of the anatomical terms and the Latin and Greek "prefixes" and "suffixes" used.

If a "glossary" could be of help to those whose mother tongue is from Latin derivation, it is not of much help to the students whose language is completely different.

If one has to accept and can convince others to believe that it is much helpful for both the instructor and the learner to process the educational phenomenon in one's own language there is then a definite place for translating the anatomical Latin terms prepared by the "International Anatomical Nomenclature Committee" (IANC) [and adopted by the Anatomical Congresses] into Arabic. One of the very important policies adopted by the first

I.A.N.C group was that "...each country to be at liberty to translate the official latin term into its own vernacular for teaching purposes".

Perhaps in order to be taken seriously-and perhaps also convincing-if you are introducing a concept that is controversial to your fellow comrades, one has to practice what he preaches. I have actually indulged heavily in what I believe in by going courageously into the very laborious and high time consuming job of translating into both Arabic (and English in the same texts) the famous « Sobotto Atlas of Human Anatomy ». The experience gained in every aspect concerning this project was both gratifying and encouraging for further similar works.

The study of Anatomy brings in its train a host of special words and terms to be mastered, and these may enrich the vocabulary to the extent of several thousand new words. It is, really, necessary for the student of Anatomy to learn what amounts to a new language.

Three factors seem to be capable of not letting the learning anatomical terms become a sheer feat of memory; these three factors are believed to relieve the mental strain entailed :

(a) constant usage, (b) appropriate knowledge of 'prefixes' and 'suffixes' of Latin and Greek origin, as well as (c) mastering of the language used in teaching.

Teaching of Anatomy in the Arabic world seems, nowadays, to suffer a lot from exactly the three above-mentioned factors which are presumably leaned upon to make learning of Anatomy a tolerable affair.

Firstly ; new medical curricula have reduced the number of hours available for Gross Anatomical studies. Thus the swift and steady increase of knowledge and the decrease of time available to acquire necessary anatomical facts has produced a more urging situation and made one's objective to save time to allow our 'Arabic' students to gain their anatomical knowledge with as little expenditure of their time as possible.

Secondly ; students, worldwide, rarely receive, nowadays, a classical education in which Greek and Latin are taught. Our Arabic students as far as I know are no exception, they do not receive such education, and failing knowledge of Latin and Greek they, like their non-Arabic comrades, can have little appreciation of the meaning of anatomical terms which are largely derived from these two languages. *(It is true that quite a number of anatomical terms are of 'Arabic' origin, but the Arabic had been latinized in such a way that what we really read now is nothing but 'latinsed' versions of the Arabic terms which have completely lost their cognation with*

real Arabic). Writers of textbooks of anatomy, knowing the matter is really difficult and believing that comprehension of the meaning of terms assists in remembering them, has led them to the inclusion of 'glossary' of the anatomical terms used in most textbooks of anatomy.

Thirdly ; it so happened that the "Arabic" student's master of the English language (which is unfortunately the language of teaching medicine in the largest number of medical colleges in different sectors of the Arab world) is really far from being satisfactory. This particular feature and its possible bearing on our "Arabic" students is the target behind presenting this paper. But why am I emphasizing Anatomy in particular while "Arabic" students may be (and really are) suffering in the same way, or even more, in other disciplines in the medical curriculum from this language 'barrier', which lies between teachers and their students Perhaps, first, because before I can claim any understanding in educational psychology I should confess that I am (and happy to be) what my comrades call a professional "Panatomist" with almost Fifty years of teaching experience in the different disciplines of morphological sciences. (My career started as a Histologist, in the United States, where I had my doctoral dissertation work, I moved to Gross Anatomy while, my field of real interest and perhaps also my favourable discipline is Neuroanatomy). Also Anatomy is more than a mere sum of data, just as a language is more than a collection of words, and anatomists, the world over, have been among the first to recognize the

need for general agreement on descriptive terms to be used in **Human Anatomy**. By extension, these agreements had an undoubted effect on "terms" used by other branches of science concerned with the human body. Again anatomists were among the first to come to a common understanding with an internationally accepted terminology which serves research workers, teachers, students, editors and publishers and users of large information services. When names of things, concepts and activities can be accepted internationally, the result is of use to a wide variety of persons. Perhaps a brief historical review will serve to give anatomists an appreciation of their contribution to nomenclature. Almost up to 1950, there were three systems of **anatomical nomenclature** in use. The oldest, known as the **Old Terminology (O.T)** grew up haphazardly in several countries without any international cooperation. It contained many duplications and names of no descriptive value. In 1896, in **Basle, Switzerland**, a group of German anatomists with the help of anatomists from other countries prepared a list of about 5,600 terms.

This first 'international' conference eliminated duplications and introduced terms of greater precision in what was called the '**Basle Nomina Anatomica**' (**B.N.A.**). Shortly after the appearance of the **B.N.A.** it was adopted by the United States of America and Italy and gradually came into use in Great Britain. In 1933 British Anatomists at **Birmingham**, adopted another system which they called the '**Birmingham**

Revision' (**B.R.**) which incorporated the best of its predecessors.

In 1950, the fifth "**International Congress of Anatomists**" was held in **Oxford, England**. It was the decision of the congress that a more conservative revision of the **B.N.A.**, was desirable and the congress established a group under the title of the "**International Anatomical Nomenclature Committee**" (**I.A.N.C.**). The writer has the honour to have been nominated among the Egyptian (and Middle East) representatives to this distinguished group of anatomists starting 1970 and ever since). As a general principle the **I.A.N.C.** has agreed that : (a) the **B.N.A. (1896)** should be taken as the basis for the new list and that (b) the number of changes should be restricted to the smallest practical number. Neither the **B.N.A.** or any of its revisions could be regarded as a 'new nomenclature' but only a mere careful selection of the old and all in one language which is "**Latin**". Actually, one of the very important policies adopted by the first **I.A.N.C.** group was that "every term in the official list shall be in **Latin**, each country to be at liberty to translate the official latin terms into its own vernacular for teaching purposes". This particular recommendation by the **I.A.N.C.** is exactly what I want to emphasize and discuss as this is exactly where I believe the problem concerning teaching **Anatomy** to our frustrated 'Arabic', medical students can be attacked.

B.N.A	English	French	German	Spanish	Italian	Arabic
pelvis	pelvis	bassin	becken	pelvis	pelvi	الحوض
lien	spleen	rate	milz	baxo	milza	الطحال
ren	kidney	rein	niore	rinon	rognone	الكلية
hepar	liver	foie	leber	higado	fegato	الكبد

These may be simple examples. However, I am going to illustrate how much easier for the "Arabic" student to proceed with his anatomical studies and become more competent with

anatomical terms, if – instead of being distressed by Latin or even English nomenclature – he can proceed with much less difficulties and more enlightments when he can read, and easily grasp, the terms in Arabic.

Ala	جناح	Culmen	قمة - ذروة	Petrous	صخري
Alba	أبيض	Cuneate	وتدي	Profundus	عميق
Ambiguous	غامض	Dens	سنة	Proximal	قريب (داني)
Arachnoid	عنكبوتي	Dentate	مُسنة	Rectum	المستقيم
Aspera	خشن	Digit	أصبع	Retinaculum	قيد
Azygos	مفرد	Distal	بعيد (قاصي)	Rotundum	مستدير
Brevis	قصير	Equina	حصان	Sebaceous	دهني
Cingulum	حزام	Ethmoid	غريالي	Semilunar	هلالية
Coarctation	تضييق	Falx	منجل	Solitarius	وحيد
collum	رقبة	Flavum	أصفر	Spine	شوكة
Coronary	تاجي	Folium	ورقة	Stratum	طبقة
Corpus	جسم	Ganglion	عقدة	Sublimis	سطحي
Cortex	قشرة	Genu	ركبة	Teres	مستدير
Costa	ضلع	Infundibulum	قمع	Vagus	الحائر - المبهم
Cribriform	مصفوي	Insula	جزيرة	Vastus	متسع
Cricoid	حلقي	Lata	عريض	Vermis	دودة
Crista	عُرْف	Lumbrical	دودي	Xiphoid	خنجري

I have selected these names from a very long and complicated list of terms and undoubtedly have missed many other names which if the space allowed would have quite lucidly emphasized and logically documented my arguments concerning this point.

As a matter of fact, I feel that if the anatomical terms are to be 'arabized' the "Arabic" medical student will have a much pleasant time in comprehending (and thus later memorizing) his anatomical list of terms compared to his English mate, who learns his Anatomy in English. A glance at the list below can give a fair understanding of the difficulty encountered by the Anglosaxon students to study (and be able to recall) their anatomical knowledge without the help of a detailed 'glossary' at their disposal.

- **Adduct** = ad-duct ... = (ad = towards, ducere = to lead)...to move towards (midline).
- **Adrenal** = ad-renal(ad = towards, renal = relating to kidney) = ...near the kidney
- **Anisocytosis** = a-iso-cyt-osis (a=not, iso = equal, cyte = cell, osis = diseased condition).... condition where the cells are of unequal size.
- **Azygos** = a-zygos (a=not, zygon = a yolk or pair) ... not paired.
- **Buccinator** = a trumpeter, the cheek muscle used in blowing a trumpet.
- **Capitate** = having a head (caput).
- **Caruncle** = diminutive of caro (flesh), a little piece of flesh.
- **Clastrum** = a barrier

- **Conjunctiva** = from conjugere, to connect (connects the eyelids with the eyeball).
- **Gracilis** = slender
- **Impar** = unpaired, single
- **Lunate from luna** = moon, moon-shaped or crescentic.
- **Luteum** = yellow.
- **Retinaculum** from retinere = to hold back, a fibrous band retaining tendons and other structures in position.
- **Saphenous** = apparent or obvious; (main superficial veins of the lower limb, often clearly visible through the skin).

Just imagine how difficult it could be for a student whose mother tongue is not English to distinguish between two words such as "stratum" and "Striatum" where the only difference lies in the presence of one letter (i) and where the meanings of the two terms become completely different. The difference between the word "pisiform" and "piriform" is also to be noted where the difference lies between the two letters, (s) and (r). So many other examples of this sort of confusion can be listed. A list of other confusing words to the Arabic student is when a word be read with the same spelling but having more than one meaning : e.g. the word 'os' means 'bone' but also means the 'mouth' of something (the external 'os' of the uterus). Another example comes from the word 'tarsus' which means (collectively) the bones forming the 'flat of the foot' but also means the 'fibrous plate of the eye lid'.

Still another perplexing situation that faces our Arabic candidates during their Anatomy course is the fact that one Arabic term, at many times, has many synonyms and I quote but a few examples: (لساني) - 'glossal' and 'lingual' both pertaining to the tongue (اللسان) , (عنقي) 'cervical', 'colli' and perhaps also 'nuchal' referring to the neck (العنق), 'arrector' and 'levator' meaning a raiser (رافع), 'flavum' and 'luteum' meaning yellow (أصفر) and 'rotundum' and 'teres' meaning rounded (مستدير).

The study of anatomy demands a constant effort of memory, even in ideal conditions, with a liberal supply of parts and with ample time spend in the dissecting room. It has become clear to me – after so many years of watching students stumble through their study of Human Anatomy – that a great number of students have extreme difficulties arising – at least in part – from their lack of proper and lucid understanding of the language of Anatomy. As a matter of fact it may be surprising to know that questioning some Anatomy graduates can show that some of them never totally and truly understood some of the terms. As we all, probably, tend to avoid things which we find confusing and difficult, this lack of proper understanding naturally causes some students to avoid the use their 'confused' anatomical knowledge at a later stage (when it is really most fruitfully needed).

If the matter, as presented above, seems reasonable and a thought of appreciation is given to at least some of the topics discussed, I feel it is desirable to stimulate open-minded questioning attitude and help the reader to realize the following facts which I am going to present in brief.

- a) It is only a matter of logic to believe that it is only natural to do **one's own learning in one's own language**, actually this is the exact positive way through which both **instructor and the learner** do their thinking.
- b) One should believe that if we are really serious about further considering the subject, **an Arabic Anatomical Nomenclature Committee (A.A.N.C)** on the same general plan of the **I.A.N.C** could be organised among selected anatomists from different sectors of the Arabic world.
- c) I believe that the only way to do something in this direction is not to wait in **arm-chair theorising till an Arabic Anatomical library** becomes available (this may really not only take years, even decades, but may not be achieved at all). The alternative is to encourage **courageous anatomists** to adventure and start the tedious and laborious job of first **translating the Nomina Anatomica**.