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Application of Thymalin in Children with Viral Hepatitis and Hepatocirrhosis with Allergic Reactions

It is established that the use of immunomodulating preparation thymalin in complex treatment of children with chronic viral affection of the liver and allergic reactions causes decrease of E immunoglobulins' level in the blood, lowers the activity of the process in the liver and frequency of allergic manifestations.

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УДК 616—071.6

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The Stereophonic Stethoscope—An Unauthorized „Invention"

In 1970 I had blundered by „reinventing" the stereophonic stethoscope and failing to mention any references in my letter.

My letter had appeared in the April II issue of **The Lancet** of that year and had caused quite a sensation initially which soon dwindeled as it turned out that similar instruments had been designed and used as early as 1859 when Allison described presumably the first one.

As you would expect I was initially quite disappointed by the influx of letters and articles from rather aggresive claimants of prirority or their enthusiastic supporters such as the former students of the late Dr. William Kerr (who made the first really stereophonic stethoscope and unfurtunately called it the "symballophone"), not just because I had not been the first, but rather because I had failed to find any references to their works before publishing my letter. But as time passed my disappointment vanished and I consider myself fortunate to have overlooked their work altogether for several reasons;

Firstly, had I known of their work beforehand, my inrerest might have waned and I wouldn't have written my letter and rekindled an almost forgotten issue, especially that I hadn't anything new to say or add to Dr. Kerr's instrument.

Secondly, the idea had clearly come to me from a carton in a non-medical journal as I had never before seen or heard of a stereophonic stethoscope either in my childhood years or during my medical training and practice.

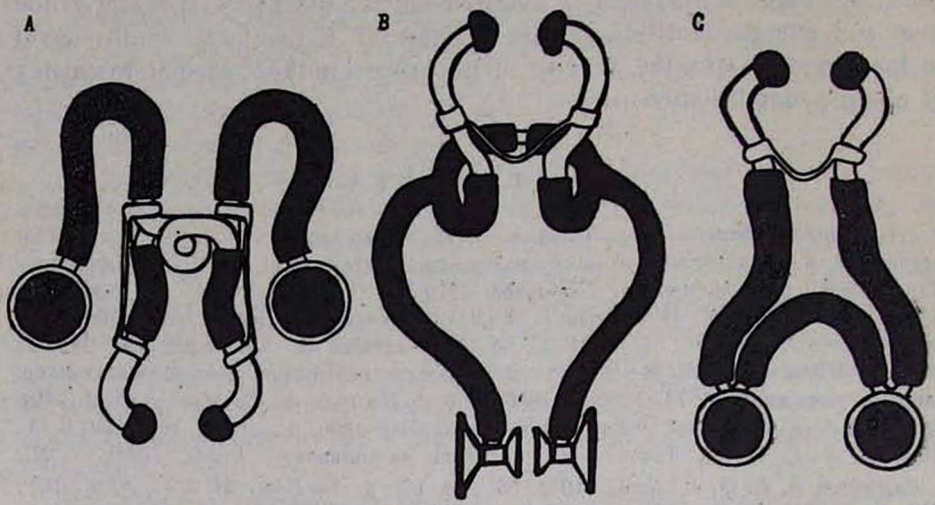

fig. Ia Kerr's Symballophone b. Stereophonic stethoscope from components of two Littman type stethoscopes. c. Stereophonic stethoscope from components of two stethoscopes.

Thirdly, even if my search in the medical literature had extended back to 1937, I wouldn't have found anything under the heading stereophonic stethoscope, or should I have been smart enough to have searched under "Symballophone", or been lucky enough to have lived near a medical instruments museum?

Fourthly, were it not so easy to construct a stereophonic stethoscope from the components of two ordinary stethoscopes in less than half a minute by and doctor, I would probably have not bothered to correct the faulty design in the cartoon. Thanks to this easy assemblage my stethoscope was tried in a London cardiology unit as soon as The Lancet received my letter and this helped its publication.

So much for patching up the ego. Let us now go back to 1819, the year Laennec published his famous "De L'auscultation Médiate" after trials lasting three years on his new instrument which he called stethoscope. The title itself is enough evidence that he had not after all been the inventor of auscultation. The term "médiate" implies the earlier existence of another form of auscultation; that described by Hippocrates himself and performed by direct and airtight application of the examiners external ear to the skin of the examinee. This was and still is "immediate" or "direct" auscultation.

Laennec could have achieved almost the same good results, and also coined his new words (rales, bronchophony, cavernous breathing.. etc.) in medicine, without having to invent a new form of auscultation, especially if his external ears had been large enough. But I suspect he had

invented this instrument to keep some distance (which has unfortunately been steadily increasing ever since he took the first step) from his patients. For how would one be able to apply his ear to the bare chest of a lady and auscultate her heart properly? Rather he would be sweating as he eyed her left nipple with his right eye at close range.

So ultimately somebody had to invent the stethoscope. Now have you ever wandered why Laennec's stethoscope had only one chestpiece and one earpiece? Elementary: Had both of side of his head, our first stethoscope would undoubtedly have had two chestpieces and two earpieces, for he would have been able to auscultate with two ears simultaneously from the first instance.

Nevertheless some years later somebody must have realized he could use both ears in auscultation simultaneously though they were placed facing opposite directions, for he invented a binaural stethoscope. Or could it be that the second earpiece had its origins in an ear-plug used to block interference from the unused ear during monaural auscultation? I believe the latter is more likely.

The binaural stethoscope is an anomalous step in the evolution of the stethoscope, for its inventor has failed to construct two chestpieces, corresponding to the two ear pieces, channeling the earpieces to one chestpiece. And because this form has become the status symbol of medicine it apparently has resisted all attempts at changing its design, as we have seen above.

It's rather unfortunate that Dr. William Kerr chose the term "Symballophone" to name a medical instrument. The uninformed, if he were to make a guess as to what it was, would say it belonged in the orchestra. Could it be that he avoided the term stereophonic because Nicolai had beaten him to it, and therefore he wanted his to be different? He could have argued that Nicolai's stethoscope was not truly stereophonic and promoted his own on that basis.

The Nicolai stethoscope was essentially a copy of Allson's (1859) with two chest-pieces joined independently to each corresponding ear. While this may serve as a stereophonic instrument in air with the chestpieces held some distance apart and facing opposite directions (essentially an extension of the ears), it is quite another matter if the chestpieces are in contact with solids and liquids as in the case of the human body. Here sound waves travel much faster than in the air and thus sound waves from a sigle source will reach both ears simultaneously, lacing the splitsecond time-lag that is essential for stereophonic hearing.

This time lag was artificially first created by Dr. William Kerr by making the crossed connections from the chestpieces to the earpieces in his stethoscope longer than the ipsilateral connections. Ideally this difference in lenght should vary depending on the location of the sound source with respect to ones ears, something not possible to do with stethoscopes [fig. 1a].

I am thus forced to conclude that the faulty nomenclature of a well designed stereophonic instrument was to blame for the failure of Dr. Kerr's symballophone to attract much attention despite the research on stereophonic sound that had begun in 1933 and the availability of stereo-

phonic records in 1956. Although some of Dr. Kerr's former students wrote to me that the symballophone had a "distinct stereophonic effect", I presume it was just a reaction to their sense of guilt for the belated awareness of that effect.

So back in 1970 as a young internist in Saudi Arabia where Japanese stereophonic and quadriphonic hi-fi sets were selling like peanuts and when large speakers and baser sounds were the symbols of affluence, I grabbed the opportunity presented to me in the form of a cartoon, to contribute semething to medicine which would be in pace with those acoustic times. I only needed the idea, for the rest was so easy.

Within a few minutes I had in my hand a functioning stereophonic stethoscope and the next day I was trying it on my patients and showing it to colleagues. They were amazed at the quality of sound it transmitted to the ears and suggested that I should publish my "invention". (fig. 1b, c): After deciding it was not worth patenting (because of the simpicity of its design), and searching in the index medicus and failing to find any stereophonic stethoscope, I sent my letter.

May I say at this point that I have never considered my work as an invention or "breakthrough". In my view I had just converted a monophonic instrument to a stereophonic one, something any sound engineer could have done in a few minutes.

The instrument's main advantages are superior quality of sound and better localization of its source. And since the two chest pieces can be placed at variable distances from each other, different heart sounds are pecked up simultaneously.

Beirut, Lebanon

Б. Л. Артинян

СТЕРЕОФОНИЧЕСКИЙ СТЕТОСКОП (НЕПАТЕНТОВАННОЕ ОТКРЫТИЕ)

Предлагается новая оригинальная модель стереофонического стетоскопа, сконструированного автором из двух обычных стетоскопов. Инструмент был апробирован в различных клиниках США и Ливана и получил высокую оценку специалистов. Повышенная чувствительность и ряд других преимуществ позволяют рекомендовать его для более достоверной дифференциальной диагностики различных пороков сердца.

Լ. Բ. Արթինյան

ՍՏԵՐԵՈՖՈՆԻԿ ՍՏԵՏՈՍԿՈՊ (ՉԱՐԱՆԱՆԱԳՐՎԱԾ ՀԱՅՏՆԱԳՈՐԾՈՒԹՅՈՒՆ)

Հեղինակի կողմից առաջարկվում է ստերեոֆոնիկ ստեթոսկոպի նոր մոդել, որը կարելի է հեշտությամբ սարքել երկու սովորական ստեթոսկոպներից։ Գործիքը ունի մի շարք առավելություններ և կարող է օգտակար լինել հատկապես սրտաբանության մեջ տարբեր սրտանների տարբերակիչ ախտորոշման համար։