

A study on hand and finger gymnastics, published in 1880, in Jassy

Un studiu despre gimastica mâinii și a degetelor, publicat în 1880, la Iași

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Abstract

In the Romanian medical literature of the 19th century, only a few studies concerning the positive effects of gymnastics on human health were published, as compared to the medical literature from various countries in Western Europe. One of the first studies published in Romania was edited in 1880, in Jassy. It is entitled “Gymnastics of the hand and fingers for strengthening muscles, making them flexible”. It was written by Professor A.J. Rosenfeld, from the Royal Institute of Stenography from Dresden.

In our paper, we will point out the most important aspects about Rosenfeld’s study.

This study was the Romanian translation of an original study, written in German by A.J. Rosenfeld. The editor of the Romanian version was Th. Balassan. On the first page of this booklet it states that this study is very useful for musicians (players), people who work in every kind of manufacture, military officers, writers, telephone-operators, etc. This study contains 34 figures and is divided into 16 chapters: the anatomy of the hand and fingers, gymnastics influence on the muscles and joints of the hand and fingers, status of neglected hands and fingers, the need of performers to have strong fingers for playing instrumental music, status of finger joints having minimal resistance, physical exercises for fingers and especially for the thumb, physical exercises for the wrist, etc.

The Romanian translation of this detailed study shows that at the end of the 19th century, Romanian physicians and perhaps nurses too were interested to improve the health of their patients, with specific reference to the strengthening and recovery of their hands and fingers.

Key words: gymnastics of hand and fingers, recovery, medical literature, A.J. Rosenfeld.

Rezumat

În literatura medicală românească din secolul al 19-lea au fost publicate doar puține studii despre efectele pozitive ale gimnasticii asupra sănătății umane, comparativ cu literatura medicală din diverse țări din Europa Occidentală. Unul dintre primele studii publicate în România a fost editat în 1880, la Iași. El este intitulat „Gimnastica mâinii și a degetelor pentru întărirea mușchilor, făcându-i flexibili”. Acesta a fost scris de Prof. A.J. Rosenfeld de la Institutul Regal de Stenografie din Dresda.

În lucrarea noastră vom pune în evidență cele mai importante aspecte ale studiului lui Rosenfeld.

Acest studiu este traducerea făcută în românește a unui studiu scris în limba germană de A.J. Rosenfeld. Editorul versiunii românești a fost Th. Balassan. Pe prima pagină a acestei broșuri este menționat faptul că lucrarea este foarte utilă pentru muzicieni (interpreți), persoane care lucrează în toate tipurile de manufacturi, militari, scriitori, telefoniști etc. Studiul cuprinde 34 de figuri și este împărțit în 16 capitole: anatomia mâinii și a degetelor, influența gimnasticii asupra mușchilor și articulațiilor mâinii și a degetelor, starea mâinii și a degetelor neglijate, articulațiile degetelor care au o rezistență scăzută, necesitatea interpretilor de a avea degete puternice pentru a interpreta muzica instrumentală, exerciții fizice pentru degete, mai ales pentru police, exerciții fizice pentru articulația carpo-metacarpiană etc.

Traducerea în românește a acestui detaliat studiu arată că la sfârșitul secolului al 19-lea o parte a medicilor români, probabil și a asistenților medicali, erau interesați de dezvoltarea sănătății pacienților lor, cu referire specifică la fortifierea și recuperarea mâinii și a degetelor.

Cuvinte cheie: gimnastica mâinii și a degetelor, recuperare, literatura medicală, A.J. Rosenfeld.

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Hand and finger gymnastics has the same importance as the gymnastics of other parts of the human body. But this fact was neglected for many centuries.

During the 19th century, significant progress was made in gymnastics in different European, mostly Western European countries, as well as in the United States. The contributions made to this field by Friedrich Ludwig Jahn (1778-1852) in Germany and Pehr Henrik Ling (1766-1839) in Sweden (1) are well known.

However, the publications concerning the role of gymnastics in preventing illnesses or in recovering health were not very numerous. In this context, there were few original publications, while most of the published material was a synthesis of previous work. Compared to the medical literature from various Western European countries, the Romanian medical literature of the 19th century comprised only a few studies on the positive effects of gymnastics - and especially of hand and finger gymnastics - on human health.

Our paper is focused on a book about hand and finger gymnastics, published in 1880, in Jassy. Its title is "Gymnastics of the hand and fingers for strengthening muscles, making them flexible". The author was Prof. A. J. Rosenfeld from the Royal Institute of Stenography from Dresden.

This book was written in German and has 17 chapters. We present the Romanian version, which was edited by Th. Balassan. There is very little information about Balassan. He was one of the owners of the "Curierul de Iași" ("Jassy Courier") publication. He was also an editor and the owner of a printing house in Jassy. In 1874, he offered a job of editor to Mihai Eminescu, but Eminescu in his turn offered this job to Ioan Slavici (2). It is difficult to know why the name of Balassan is present in the National Retrospective, but with no other biographical data (3).

Unfortunately, we have no information about Rosenfeld or this Institute where he was a professor.

Regarding stenography, it is useful to put it in the context of the mid-19th century. At that time, the increasing needs of communication for business required the mechanization of the writing process. Stenographers and telegraphers had the possibility to take down the information at rates of up to 130 words per minute. This was a significant progress for that period. For comparison, a writer with a pen could write a maximum of 30 words per minute (in 1853) (4).

In order to provide a landmark for Romanian books on gymnastics, it is useful to mention the publication in 1881 of the book entitled "The History, Anatomy and Hygiene of Gymnastics, Following the Most Significant Authors, with the Principal Figures and Explanations about Baths and the Swimming School" elaborated by Gheorghe Moceanu (1835-1909) (Bârsu, 2014).

In the preface, Rosenfeld mentions the beneficiaries of hand and finger gymnastics. Depending on profession, they are musicians (composers and performers), writers, printers and lithographers, painters and designers, xylographers (wood engravers), metal engravers, ivory workers, watchmakers, jewelers, weavers and cloth manufacturers, telegraph girls, children who write and calculate. Persons with various post-surgical or post-traumatic sequelae in

fingers as a result of frostbite or trauma are also included.

The book contains 32 pages and 35 figures in the text with exercises for the hand and fingers. Finally, it has a plate attached which includes 35 other images relating to human body gymnastics. In Figure 1, the title page of this book is presented.

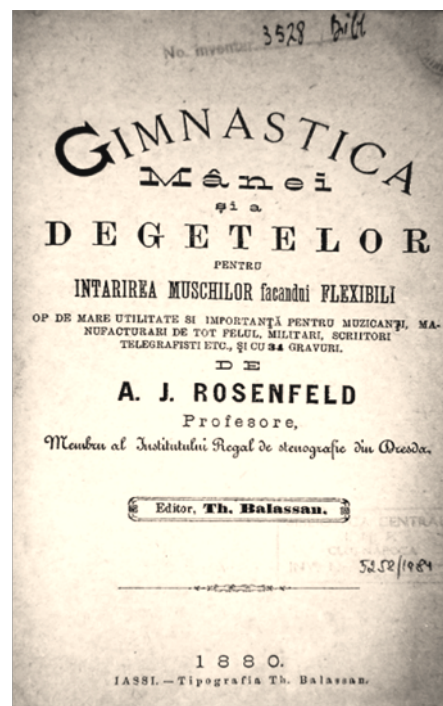


Fig. 1 – Title page of Rosenfeld's book.

Chapter I is entitled "Anatomy of the hand, about joints, nerves etc." and gives a description of the hands, fingers, as well as some data on the physiology of their movements. First of all, a scheme of the skeleton of the hand and fingers is presented (Fig. 2), but without mentioning the name of each bone. Then, a scheme of the muscles of the wrist is provided (Fig. 3), but without mentioning the name of each muscle. The original form of this study probably included the anatomical terms.

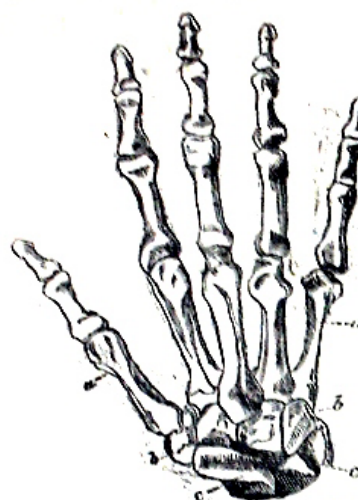


Fig. 2 – The skeleton of the hand and fingers.

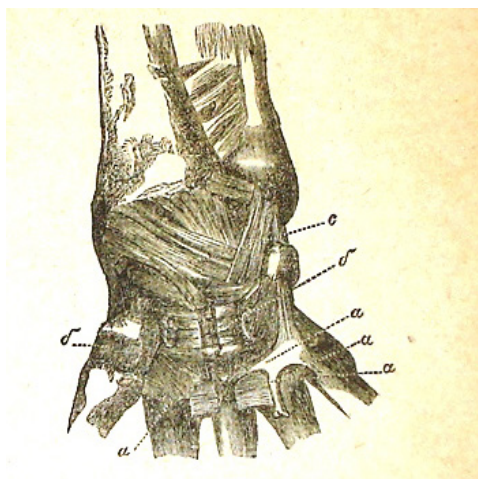


Fig. 3 – The muscles of the wrist.

Chapter II is entitled “The hand and finger structure”. It contains descriptions of the hand bones with joints, muscles and tendons. It should be noted that all the anatomical elements of the hand and fingers were displayed in the 4 images included in the book, without being described in text or figure legends. This method shows that the author did not insist on the anatomy of the hand and fingers, because he wrote this book for the general public (not for physicians).

Chapter III is entitled “Influence on the muscles and joints of the hand and fingers by gymnastics”. It is interesting that the author also mentioned the risk of muscle tension.

An interesting chapter is Chapter IV, which bears the title “Neglect of the hand and fingers until now”. Rosenfeld describes some aspects about the neglected and untrained hand and fingers. He included six “pro domo” quotes regarding the need of hand gymnastics, associated with the gymnastics of the whole body. The quoted authors are European physicians: Dr. Dietz, P. H. Link, Professor Schmidt, Dr. M. Bally and Dr. Ferguson.

Chapter V is entitled “Finger joints are less exercised and the weakest”. Rosenfeld provided arguments for the fact that the knuckles of patients having all occupations, except for pianists and violinists, are less used, thus being weaker compared to other joints of the human body. However, this argument is not entirely correct, because these joints are very much used also by cellists, double bassists and organ players.

“The main difficulty is not reading musical notes, but finger weakness” is the following chapter of this book. The author argued, contrary to the general opinion, that for musicians the main difficulty is neither learning, nor reading musical notes, but “the insufficient function of fingers and wrists”. Therefore, he recommended to start with gymnastics to strengthen the finger muscles, hand joints and even hand bones, and then to learn the musical notes.

The next chapter’s title exceeds the subject of a publication regarding gymnastics. The title is “About music, an art which requires the greatest development of the muscles of the fingers”. The author refers to interpretative music. He argues that gymnastic exercises

for the performers’ hands would have been introduced 150 years before, i.e., in the mid-18th century. Thus, in Rosenfeld’s opinion, these hand exercises should have been introduced during the time of Johann Sebastian Bach (1685-1750), Georg Friedrich Handel (1685-1756), etc. However, this argument is not entirely correct, keeping in mind that different instruments were modernized during the 19th century, such as the piano, horn, harp, etc. So, there was a certain change in the groups of muscles used for playing these instruments. Rosenfeld recommended that all the exercises described in this brochure should be carried out, because limitation to some gymnastic exercises would not be sufficient for a proper functionality of the hand and fingers.

Chapter VIII – “Artists and music teachers” – refers to the importance for artists to practice hand gymnastics, emphasizing that this should be known primarily by music teachers, and recommended to their pupils as well as to all those interested.

Chapter IX – “Free gymnastic exercises for fingers” – deals with the very simple movements that must be performed during different types of gymnastics. Rosenfeld included a figure in which he presented different simple exercises for the fingers (Fig. 4).

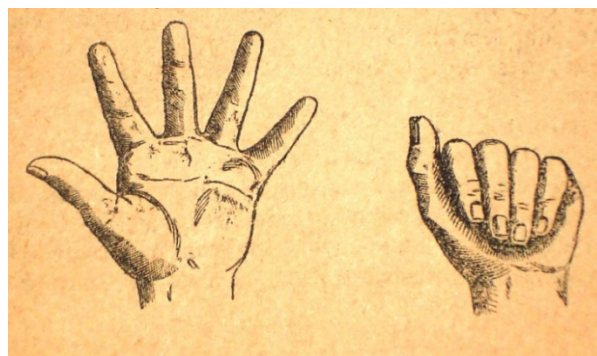
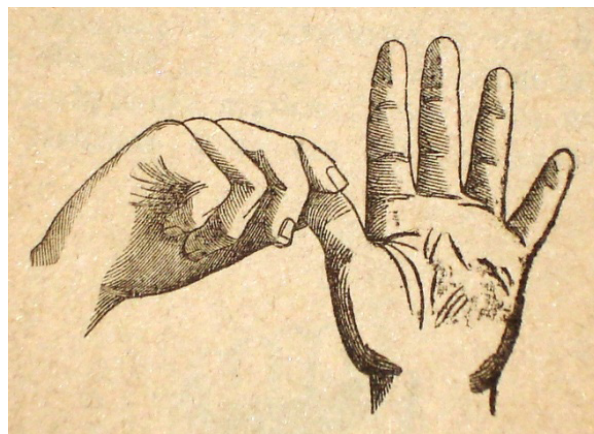
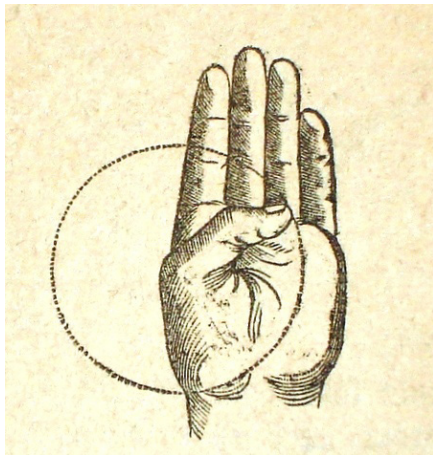


Fig. 4 – Different simple exercises for the fingers.

We will not describe the following two chapters, “Free gymnastic exercises for the thumb” and “Free gymnastic exercises for the wrist”, but we enclose three figures (5 a, b and 6) in which different simple exercises for the thumb and an exercise for the wrist are mentioned.



a



b

Fig. 5 a, b – Different simple exercises for the thumb.



Fig. 6 – Exercise for the wrist.

Chapters XII and XIII present “finger exercises with tools”. The “tools” are 4 cylinders 2 inches long, $\frac{1}{2}$ -1 inch in diameter. Rosenfeld included different figures to show finger exercises with tools. We mention only one example (Fig. 7).

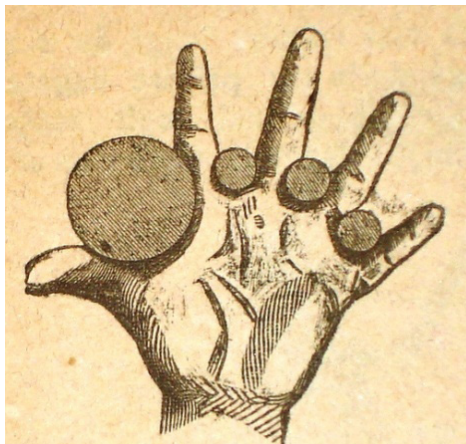


Fig. 7 – Finger exercises with tools.

The following chapter is entitled “Board tensioners for stretching the muscles of the thumb and other fingers”. A board tensioner is 22 inches long, 4-5 inches wide, $\frac{3}{4}$ inch thick, and has small canals 4-5 $\frac{1}{2}$ inches deep. The author gave examples of exercises for the thumb and fingers, using board tensioners (Fig. 8).

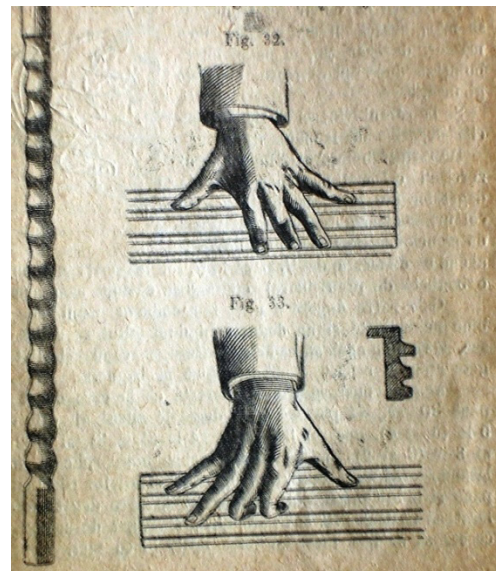


Fig. 8 – Exercises using board tensioners.

Chapter XV – “Exercises with tools for the wrist of the right hand” – describes some gymnastic exercises for instrument players, such as violinists, violists, cellists, etc. The purpose of these exercises is to increase the agility of the wrist and, secondarily, the agility of the elbow joint.

A very interesting chapter is the following one, entitled “Staccato Tone”. The aim of the gymnastic exercises is to strengthen the joints of the fingers, wrist, elbow and shoulder. These exercises were recommended first of all for pianists. It is useful to mention the significance of staccato: it is a form of musical articulation, signifying a note of shortened duration, separated from the note that may follow by silence (5).

The last chapter bears the title “Conclusions, options”. The author noted that “It must not be forgotten that a too energetic fire [n. n. – an effort] has a negative effect on the muscles and the nerves, making them fragile; while some [gymnastic] movements done with quietness make them stronger”.

Another significant indication given by Rosenfeld is the following: “The condition for practicing all gymnastic exercises is to practice them in front of a mirror, with energy (power) and according to indications, but never with excess”.

Rosenfeld quoted Eduard Ferdinand Angerstein, who pointed out that “during the hours when children at school practice on instruments, [the effect] of a five minute break in which they do finger exercises revitalizes once again the hand, even if it had been already tired”. It is interesting to note that Angerstein was the author of the book “Home gymnastics for the well and sick” (1889) (6).

At the end of the book, Rosenfeld attached a large drawing, comprising 35 gymnastic exercises for the whole human body. There is only one reference to these figures, in Chapter IV, written by Professor Schmidt. Unfortunately, Rosenfeld did not specify the identity of this professor. Schmidt insisted on the usefulness of practicing general gymnastic exercises for the health of the whole body. Some images are exercises with the ball, others with small weightlifting movements of bending, rotation of the body,

etc. In Figs. 9 a, b, c we give examples of different physical exercises recommended by Rosenfeld, in order to complete hand and finger gymnastics.



a



b



c

Fig. 9 a, b, c – Different physical exercises recommended by Rosenfeld, in order to complete hand and finger gymnastics.

Conclusions

1. The Romanian translation of this detailed study shows that at the end of the 19th century, Romanian physicians and perhaps nurses too were interested to improve the health of their patients, with specific reference to their hands and fingers, to promote their health or to recover them.

2. This Romanian translation was done in a clear way, having few medical terms, e.g., anatomical terminology. This facilitated the use of this study by the general public, not only by physicians.

3. For an easier understanding of the physical exercises recommended by Rosenfeld in this study, he included 70 images, mostly for the hand and fingers, but also for the body.

Conflict of interest

The authors confirm that this article content has no conflict of interest.

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