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INVENTION AND EVOLUTION OF THE PARALLEL BARS IN THE FIRST HALF OF THE 19TH CENTURY

Key words: German gymnastic system, parallel bars, dynamic-static exercises, multiple purposes.

ABSTRACT

Friedrich Ludwig Jahn believed that his students would be better prepared for the vaulting horse, if they performed exercises, transpositions, immersions and hand standings on two horizontal, symmetrical bars. For this purpose, he fastened two parallel bars onto tree boles and asked his students to practice on them. This way the parallel bars were established as the main apparatus in the German gymnastic system. Jahn's first parallel bars were stable with the poles dug in the ground, with fixed height and width. The parallel bars were initially a piece of multi-purpose apparatus for performing static and dynamic exercises on. George Pagon referred to the parallel bars in the first Greek sports book in 1837. In the mid-19th century, parallel bars with adjustable height and width replaced the fixed ones. This type of parallel bars was then greatly improved over the years. The aim of this study was to discuss the invention, evolution and utility of the parallel bars during the first half of the 19th century.

INTRODUCTION

The German gymnastic system was based on the so-called stable gymnastic apparatuses such as the vaulting horse, parallel bars, horizontal bar, rings, climbing rope, etc. The founder of the German system as well as the owner of the first hypaethral public gymnasium was Friedrich Ludwig Jahn [1]. Having studied the works of the Humanitarians and mostly Guts Muts, Jahn took over most of their gymnastic apparatus and created a new gymnastic movement endued with a specific political and patriotic ideology [2].

Both the horizontal bar and the parallel bars are considered apparatus invented and promoted by Jahn himself during his first year of operation of the gym. Furthermore, they were established as a symbol of the German gymnastic system and later held a dominant place in instrumental gymnastics [3].

Several years earlier, the Humanitarian Guts Muts, in his book published in 1793 entitled "Gymnastic für die Jügend" (Gymnastics for the Youth), referred amongst others, to hand standings on the 'arms' of the armchair directly related (kinetically) to exercises on the parallel bars [4]. At that time, the vaulting horse, which motivated Jahn to invent the parallel bars, was a piece of multiple purpose apparatus (with handles) which evolved from the horse model [5].

Greek and international literature lack works concerning the invention and evolution of the parallel bars in this specific period. The aim of the present study was to fill this gap by reporting the true story of this gymnastic apparatus and supplying additional data for future research in the

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area. The multiple and auxiliary uses of parallel bars during the first half of the 19th century are also presented.

The data for the present work were collected from primary and secondary sources. The following books were used as primary materials: *Gymnastic für die Jügend* by Guts Muts (1973), *Die Deutsche Turnkunst* by Friedrich Ludwig Jahn (1816), *Summary of Gymnastics* by George Pagon (1837), *Handbuch des gesamten Turnwesens* by Rudolf Gasch (1920) and *Geschichte der neueren deutschen Leibesübungen* by Edmund Neuebdorff (1930). Finally, information about the evolution of the parallel bars was also taken from Göhler's paper *Der Baren feiert Geburtstag, Turnen & Sport* (1987) and from Spieht's book *Geschichte der Turngeräte* (1989) which includes a separate chapter devoted to the parallel bars.

INVENTION AND ESTABLISHMENT OF THE PARALLEL BARS BY FRIEDRICH LUDWIG JAHN

Friedrich Ludwig Jahn believed that his students would be better prepared for the vaulting horse, if they performed hand standings, transpositions and immersions on two parallel symmetrical bars. Jahn constructed his apparatus by nailing two bars onto tree boles and encouraged his students to use it for various exercises (Fig. 1). Jahn's students quickly embraced this new auxiliary and improvised apparatus and were willingly performing numerous exercises. The bars then replaced all the earlier gymnastic apparatus [6].

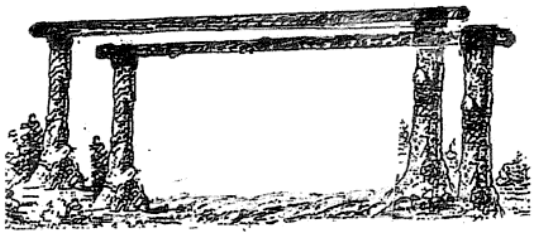

Figure 1. Jahn's first parallel bars (two parallel horizontal bars nailed onto tree boles) (Kaimakamis 2001, p. 341)

The first regular parallel bars originated from this primitive set up. They became the main gymnastic apparatus and held the primary place in the German gymnastic system and later in instrumental gymnastics [7].

This new apparatus consisted of four thick poles infixed in the ground, and the two horizontal parallel bars placed on them at a fixed height (Fig. 2). The apparatus was used for more static and dynamic exercises than simple swinging and amplitude exercises. Still the bars were considered auxiliary apparatus to the vaulting horse as well as other kinds of apparatus gymnastics and sports [8].

Figure 2. The first regular parallel bars and Jahn's three parallel bars invented and manufactured between 1811 and 1812 at the first hypaethral gymnasium in Hasenheide near Berlin (Göhler 6.1987:121, Spieth 1989, p. 62)

At the same time Jahn and his colleagues started to manufacture similar primitive parallel bars of various dimensions. The bar's length was up to 2.75 m. The new apparatus was then called 'Der Barren', i.e. the parallel bars [9]. In order to spare some space and materials for the second gymnasium (1812), Jahn built three parallel bars and nailed them onto six poles (Fig. 3). Similarly, Jahn's horizontal bars were positioned in a row or a circle [10].

Detailed information about the first parallel bars can be found in Jahn's book written together with Eiselen from 1816 entitled *Die Deutsche Turnkust* (German artistic gymnastics). Jahn devoted eight pages to the parallel bars in three different chapters. In the first chapter, he described the form, material and ways of manufacturing of the parallel bars (Fig. 3); in the second chapter he included a list of static and dynamic exercises, and in the third chapter, of swinging exercises. All the aforementioned exercises are regarded in modern instrumental gymnastics as play exercises or exercises to develop skills and dexterities. Jahn noted that beginning gymnasts should first practice on low parallel bars (up to the trainee's height),

while advanced one should use higher bars (above the trainee' height) [11].

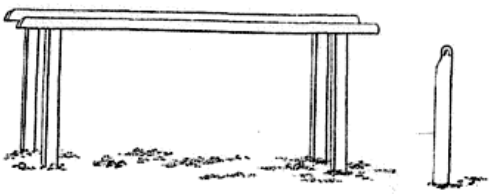

Figure 3. Parallel bars with a pole on the right (Jahn 1816, p. 334)

EXTENSION AND EVOLUTION OF JAHN'S PARALLEL BARS IN THE 1850s

Jahn's gymnastic movement became widespread not only in the German tiny states but also all over Europe and America. Gymnasium clubs and hypaethral gymnasiums based on Jahn's model were founded in many places. Along with Jahn's new gymnastic movement, the parallel bars also evolved. It should be noted that in the early 19th century the parallel bars and other gymnastic apparatus did not have specific dimensions and operational specifications. In certain gymnasiums, high parallel bars were used for swinging exercises in a similar way to the horizontal bar (Fig. 4) [12]; in others, low thick bars or parallel bars of varied shapes and dimensions were utilized (Fig. 5) [13].

One of Jahn's students by the name of Durre reported that some exercises performed on the parallel bars were not designed for exercises to strengthen the arms but to control the body during swinging [14]. This implies that they were used for preparative exercises for the pommel horse.

Figure 4. Exercises on the parallel bars in a hypaethral gymnasium in Clias (Prestigde 1989, p. 7)

In several European cities (Berlin, Paris, London, etc.) some doctors founded special institute-gymnasiums for the treatment and rehabilitation of disabled girls. They used gymnastics for treatment of girls' muscosceletal and posture problems. Amongst various gymnastic apparatus pieces, they also used parallel bars of different sizes. Some of them also published books, e.g., Jacques-Mathieu Delpech in 1828, who described some exercises on the parallel bars [15]. Figure 5 depicts Delpech's parallel bars with adjustable height and inclination.

It is noteworthy that these private institutes were the first female gymnasiums where for the first time women were allowed to exercise, still, however, Jahn's movement was directed to men only [16].

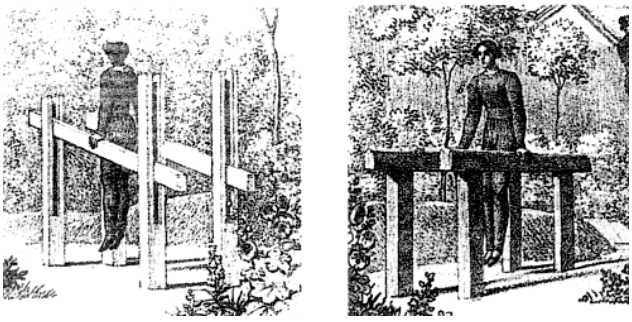

Figure 5. Girls with muscosceletal problems exercising on primitive parallel bars. Jacq.-Mathieu Delpech's drawings from 1828

In the 1820s Jahn's primitive parallel bars used as auxiliary apparatus evolved into a more stable and tailored construction, with the poles being infixed 50 cm to the ground and connected to each other (Fig. 6) [17].

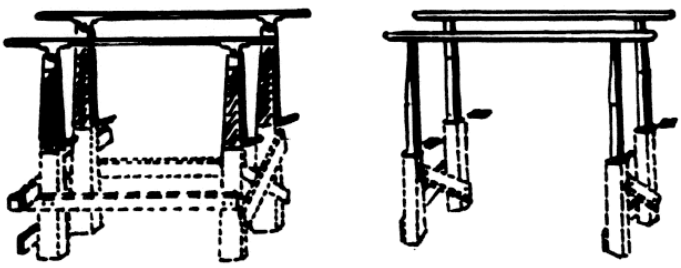

Figure 6. In the 1820s the parallel bars were made of wood, infixed to the ground and constructed by special technicians at a fixed height (Gregenow & Samel 1919, Gajdos 1997, p. 171)

In 1841 Ernst Eiselen (Jahn's student and colleague) published 46 drawings illustrating various exercises as assistance guidelines in apparatus gymnastics. Amongst various pieces of apparatus, the parallel bars were also described (Fig. 7) [18].

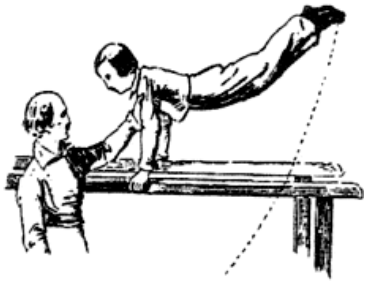

Figure 7. Exercises and assistance on the parallel bars, Eiselen's drawing from 1841 (Pahncke 1983, Gasch 1920)

The increased interest of young people in the parallel bars in combination with their functional and organizational needs arising from their age and skill differences, led some enlightened gymnasts of that time to develop new, more handy and functional apparatus. In 1850 the new improved mobile parallel bars started to be manufactured. The new apparatus had adjustable height and width, and the poles were attached to a wooden plane to ensure stability and endurance (Fig. 8) [19]. According to Wild, the first perfected mobile parallel bars were manufactured in 1857 by the German pharmacist and gymnast Herman Kluge [20]. This new apparatus was then improved and became widespread as one of primary apparatus in several hypaethral and indoor gymnasiums. The trainees started to perform more and more complex exercises irrelevant to the pommel horse. Soon the parallel bars were considered a significant apparatus piece in instrumental gymnastics. Finally, it is noteworthy, that in 1819 the Swiss Phokion Heinrich Clias and later in 1830 the Spanish Odeano Amoros, had also demonstrated mobile parallel bars, which, however, never gained any widespread popularity [21]. Odeano Amoros used two alternatives of the parallel bars: with one bar higher than the other (similar to present-day uneven bars), and with inclined bars on one side of the apparatus.

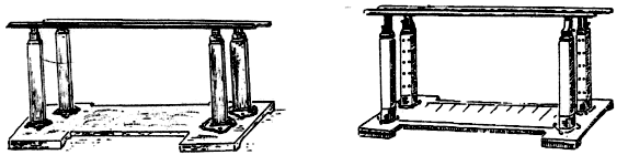

Figure 8. The first mobile parallel bars with adjustable height and width were introduced and became popular in the mid-18th century (Gasch 1920 p. 527, Gajdos 1997, p. 271)

GEORGE PAGON'S PARALLEL BARS IN MODERN GREECE

In 1837, George Pagon who had studied and taught in Munich published the first modern Greek book about gymnastics in Athens [22]. He wrote a seven-page chapter about the parallel bars. First, he described the form and manufacturing of the parallel bars, followed by apparatus exercises and performance guidelines. The Greek term for the parallel bars 'dizygo' is commonly attributed to this pioneer Greek gymnast (Fig. 9) [23].

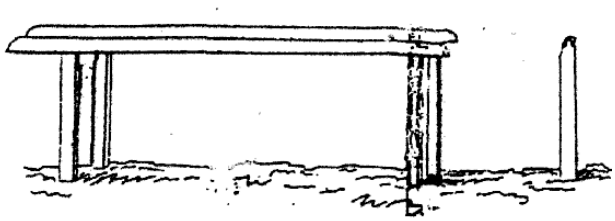

Figure 9. Pagon's parallel bars similar to Jahn's (Pagon 1837, Picture 4)

Pagon provided the following description of the parallel bars: "The apparatus of parallel bars consists of two parallel bars and four poles. The bars should be at least 8 feet long, 5 fingers high and 2 ½-3 fingers wide. The upper side of the bars should be round while the underneath side should have oblique angles. The width of the poles should be larger than the bars but without angles, the distance between them should not exceed one foot, and they should fit the bars. The height of the parallel bars should be up to the axilla for the beginners and up or above the head for the advanced trainees" [24].

Following Jahn, Pagon divided apparatus exercises into two categories: A – hand standing and sitting up exercises to strengthen the arms, improve the body swinging and posture; and B –

swinging exercises with support zones and vibration to improve swinging technique and close movements. He also thoroughly described numerous exercises from Category A that included hand stands in the middle and on the edge of the parallel bars, bending, hand walking, turning, hopping and many other static strengthening exercises aimed at improvement of flexibility of the arms and shoulders. Category B included several swinging exercises with front or arm support similar to present-day preparatory apparatus exercises.

The following observations can be made about Pagon's parallel bars:

– it was mobile with infixed poles to the ground and quite thick bars at a fixed height;
– static, dynamic and swinging exercises were performed on the parallel bars;
– also technically more difficult preparatory exercises were performed, e.g. stretching the legs.

Pagon's time was the period of emergence of artistic gymnastics using the parallel bars and other apparatus.

Finally, it should be kept in mind that Pagon's book was directly related to Jahn's work from 1816. Pagon wrote in the prologue that "The present overview of gymnastics is based on the writings of Mr. Guts Muts and Mr. Ludwig Jahn…" [25]. Pagon's parallel bars (form and exercises) were closely related to Jahn's.

The information about the form and dimensions of the parallel bars taken from the *Encyclopedic Dictionary of Eleutheroudakis* [26] refers the primitive form of the apparatus in the first half of the 19th century. According to this dictionary "George Pagon introduced the parallel bars in Greece… The apparatus was placed in the gymnasium next to the old Almshouse. The first director of the gymnasium was the Bavarian Ottendorf and later Pagon himself, who also invented the Greek terminology for this apparatus". The same dictionary also included information that the parallel bars were made from beech and consisted of four square poles, 6-10 cm in diameter and 60 cm infixed to the ground. The bars were round and the distance between them was 45 cm. The figure taken from this dictionary depicts primitive mobile parallel bars apparatus (Fig. 9). According to a number of sources, in all likelihood the first parallel bars was placed in the first gymnasium of modern Greece in the city of Nauplio in 1835 but not later than 1858 [27] However, under the leadership of I. Kapodistrias, the first governor of modern Greece, physical exercises according to the German system were promoted in an orphanage in the city of Aigina. That was just before the arrival of the Bavarians and ensuing legislation on physical exercises [28]. According to the "Athens" newspaper from that time: "…in the orphanage in the city of Aigina, there was a teacher of gymnastics following the German system" [29]. Thus the Greeks had been familiar with the German gymnastic system and instrumental gymnastics before the arrival of the Bavarians and publication of Pagon's book.

In modern Greece, the parallel bars were also associated with a tragic event at a time critical for the popularization of instrumental gymnastics. In 1868, at the Central Gymnasium under Pagon's directorship a trainee Michael Fokianos (brother of I. Fokianos), fell from the apparatus suffering fatal injuries [30].

CONCLUSIONS

– The parallel bars were invented by Friedrich Ludwig Jahn in the 1810s.
– In the beginning it was used as auxiliary apparatus for trainees' preparation for the vaulting horse, but later it evolved into important gymnastic apparatus that held a primary place in the German gymnastic system and instrumental gymnastics.
– Jahn constructed the first parallel bars from two parallel bars nailed onto tree boles. Afterwards, the four poles were stabilized to the ground and the two parallel bars were nailed on them.
– In the beginning the exercises on the parallel bars focused on trainees' preparation the vaulting horse; they were static and dynamic without swinging or amplitude.
– The parallel bars evolved throughout the years, while at the same time numerous exercises with several combinations were created specifically for this apparatus.
– In Greece, the parallel bars have been known since the foundation of the modern Greek state, as it was one of the dominant elements of the German gymnastic system adopted in Greece in the 19th century with great contributions from George Pagon (1837).

- The evolution of the parallel bars from the stable infixed form to the mobile one with adjustable height and width began in the mid-19th century.
- Finally, it is historically proven that the parallel bars have been multiple purpose apparatus appropriate for the acquisition of kinetic skills and constitute an important component of modern athletics and physical exercise for men and women alike.

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