

The History of Ear Acupuncture and Ear Cartography: Why Precise Mapping of Auricular Points Is Important

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ABSTRACT

The current author had the opportunity to present a study on the history of ear acupuncture at the International Summit Forum on Clinical Application of Acupoints in August 2018 (from August 25 to August 27), in Beijing, China, and to introduce the latest ear chart by Frank R. Bahr, MD, there. This article is based on that presentation and includes more historical facts. Although the relationship between the ear and meridians was discussed previously in the famous book, *The Internal Classic of the Yellow Emperor (Huang Di Neijing)*, the first auricular map was published in 1888 by Zhenjun Zhang in his book *Essential Techniques for Massage (Lizheng Anmo Yaosu)*. This map was a drawing of the posterior aspect of the ear showing areas of the five *Zang* organs: Heart; Liver; Spleen; Kidney; and Lung. Paul Nogier, MD, discovered ear somatotopy, a representation of the whole person on the ear in the shape of a homunculus, or inverted fetus, on the ear. Dr. Paul Nogier's ear map was first published in 1957. A more-detailed presentation, the *Loci Auriculomedicinae*, elaborated by Drs. Paul Nogier and Bahr as well as René J. Bourdiol, MD, appeared in 1974. A new edition will soon appear in French. Auricular medicine is an excellent method, but only if the ear points are located precisely. Preconditions for this ability are excellent knowledge of the ear's anatomy, documented on a very detailed modern ear chart, such as the one recently created by Dr. Bahr, and constant practice of pulse palpation according to Dr. Paul Nogier with the vascular autonomous signal.

Keywords: ear acupuncture, ear cartographies, auriculotherapy, auriculomedicine, Paul Nogier, vascular autonomous signal

INTRODUCTION

WHEN PARTICIPATING in ear acupuncture conferences and teaching many Chinese students, one often hears the preconceived opinion that ear acupuncture is less effective than body acupuncture. Is this really true? If not, where did this misconception come from? This article presents the historical context of ear acupuncture from ancient Chinese scripts and the first rudimentary ear chart in China to the first concept of the inverted fetus on the ear by Paul Nogier, MD (1908–1996 AD).¹ Later on, different researchers developed their own systems of auricular cartog-

raphy, of which many lacked the necessary precision for successful auriculotherapy. In the body acupuncture of Traditional Chinese Medicine (TCM) it is sufficient to use relatively crude measures, such as width of the thumb (*cun*) to define the point of needling, which, for obvious reasons, cannot be applied to the ear. Therefore, only very precise and detailed ear maps are useful and stand the test of everyday practicability. All ear charts—from the first Chinese copy of Dr. Paul Nogier's map to the official World Health Organization (WHO) map based on that map—have the disadvantage that the single fields are too large or—as in the sectograms by David Alimi, MD,² and Marco Romoli, MD,

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and Roberto Mazzoni, MD³—too distorted to give useful representations.

As the points on the ear do not only represent the anatomy but also the function and the psyche, including its traumas, there are blockage points,^{4,5} such as pain-memory points, that must be found and treated in all patients who have chronic pain. There are also homeopathic points and others representing druglike actions.⁶ From these facts, it can be concluded that the points on the ear are very close together and must be addressed with utmost precision to achieve the desired effect of a good auriculotherapy treatment. The current article shows how this can be achieved.

EARLY CHINESE LITERATURE

The earliest Chinese book describes the connections between the external ear and the eyes, cheek, and throat, as well as the upper limbs. Its title is: *The Yin–Yang Eleven Channel Moxibustion (Yinyang Shiyi Mai Jiujiing)*. Unknown authors wrote it between 770 and 221 BC during the Spring and Autumn period and the Warring States period. It



FIG. 1. Medical text on silk from the Mawangdui burial site. © Public domain.



FIG. 2. Simiao Sun (581–682 AD), King of Medicine. © Commons.

is the famous silk book unearthed in 1973 from a Han tomb in Mawangdui, Hunan, province (Fig. 1).⁷

During the Qin and Han Dynasties (21 BC to 220 AD), one of the earliest classics of TCM—the well-known *Inner Classic of the Yellow Emperor (Huang Di Neijing)*⁸—described disease diagnosis by inspection of the ear (auricular diagnosis) and treatment of cramps by bleeding at the back of the ear (auriculotherapy). The book also gave more details about the relationship between the ear and the internal organs and with the channels.

In the Tang Dynasty (618–907 AD) there was a famous physician, Simiao Sun* (Fig. 2), who was also called the King of Medicine (*Yaowang*) because of his knowledge and popularity. He wrote *Important Formulas Worth a Thousand Gold Pieces (Qianjin Yaofang)*⁹ and *A Supplement to Recipes Worth a Thousand Gold Pieces (Qian Jin Yi Fang)*,¹⁰ where he recorded, in 30 volumes, the locations and contents of auricular points, and the *Yangwei* Vessels at the back of the ears. He also described the treatment of jaundice with auricular points.

During the Ming Dynasty (1386–1644 AD), Jizhou Yang described the significance of the apex of the ear in the *Compendium of Acupuncture and Moxibustion (Zhenjiu Dacheng)*, published in 1601 AD,¹¹ indicating the theoretical background and technical procedures involved. In Yufan Zhou's *Massage Technique for Children (Xiaoer*

*Chinese doctors in the past did not have academic degrees as in the West. They were called either “*Yi sheng*” or “*Dai fu*,” (Medicine Man).

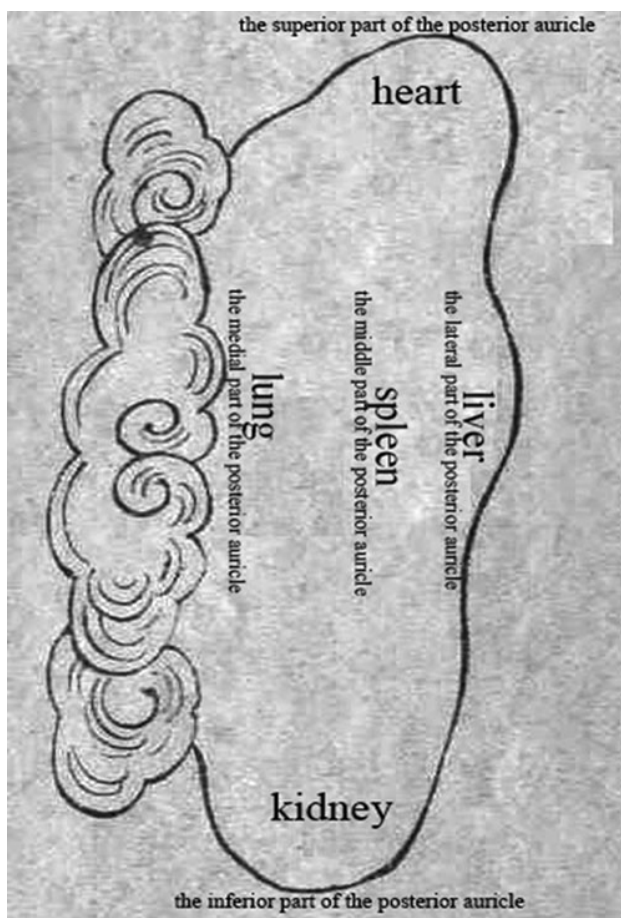


FIG. 3. Earliest ear chart, published in 1888, showing the back of the ear. From Zhenjun Zhang’s book, *Essential Techniques for Massage (lizheng anno yaosu)*. © Public domain; copyright expired.

Anmo Shu),¹² the theory that the five *Zang* organs—Heart, Liver, Spleen, Lung, and Kidney—each correspond to an area at the back of the ear was first described. Toward the end of the Qing Dynasty (1645–1912 AD), in 1888, based on this theory, Zhenjun Zang presented the earliest auricular map in *Essential Techniques for Massage (Lizheng Anno Yaosu; Fig. 3)*.¹³

WORLD LITERATURE

The first non-Chinese documentation of ear acupuncture dates back as early as ancient Egypt. The treatment of gynecologic problems by needling or cauterization was mentioned in the Papyrus Ebers 1500 BC,¹⁴ which is currently kept in the University Library of Leipzig, Germany. This is considered to be the oldest

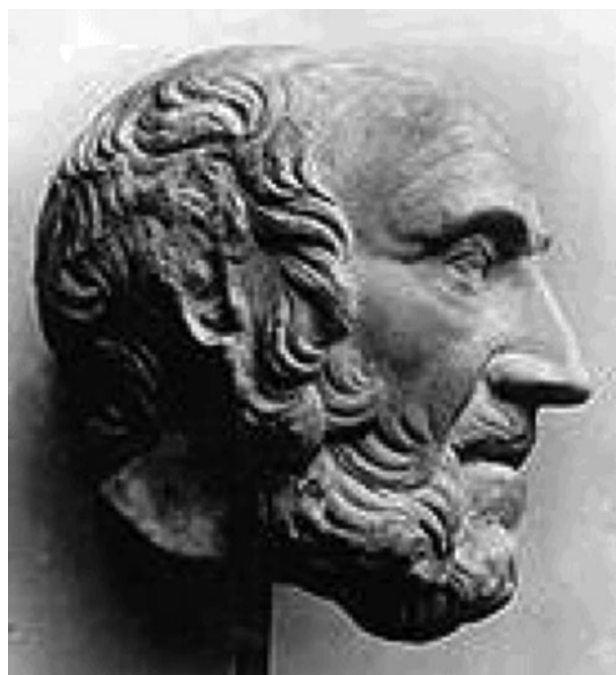


FIG. 4. Hippocrates, the famous physician from Kos/Greece (460–370 BC), described bloodletting at the ear to address impotence. © Commons.



FIG. 5. Dutch painter, Hieronymus Bosch’s (1450–1516 AD), *Garden of Desire*. Right wing of a triptychon describing ear acupuncture. © Commons.

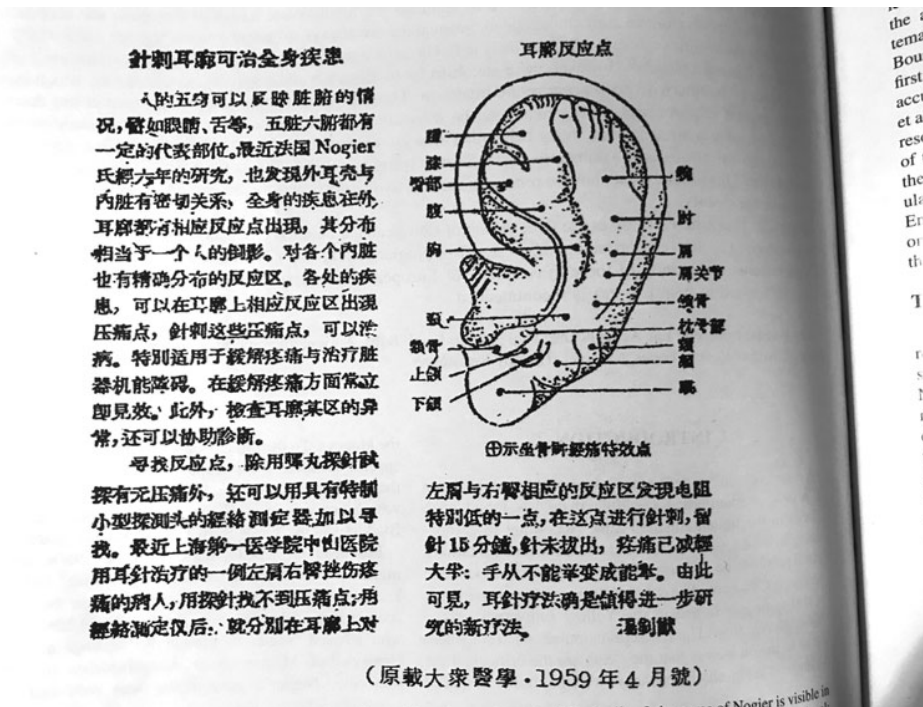


FIG. 6. Original publication of Paul Nogier, MD.’s first ear chart, in 1959, in China. Dr. Nogier’s name is on line 3. © Bahr; reprinted with Bahr’s permission

medical text worldwide. Also the famous Greek physician Hippocrates (460–370 BC; Fig. 4) reported that bloodletting at the ear reduced problems with impotency and ejaculation.¹⁵

Another famous picture of ear acupuncture was created by the Dutch painter Hieronymus Bosch (1450–1516 AD) in his triptych, the Garden of Desire, which is kept in the Prado Museum in Madrid, Spain (Fig. 5).¹⁶

The first systematic research on ear acupuncture is credited to Dr. Paul Nogier, who can rightfully be called the “Father of Auriculomedicine.” This general practitioner in Lyon, France, saw patients with scarification marks on their ears. The patients reported unanimously that a healer from Corsica had treated them for low-back pain (sciatica) with cauterization at the anthelix root—and that their pain had disappeared permanently. From this observation, Dr. Nogier deduced the auricular somatotopy of the inverted fetus.¹ Dr. Paul Nogier presented the resulting ear chart at the First Congress of the Mediterranean Society of Acupuncture (Premier Congrès de la Société Méditerranéenne d’Acupuncture), Marseille, France, February 25–26, 1956, where Gerhard Bachmann, MD, editor of the *German Journal of Acupuncture (Deutsche Zeitschrift für Akupunktur)* also attended and published Dr. Paul Nogier’s presentation.¹⁷

From there, the information spread via Japan to China, where, in 1959, an article appeared in the Chinese journal *Popular Medicine*.¹⁸ In the original article, Dr. Nogier is also mentioned and appears in Latin letters on line three, which showed that he was also recognized in China as the discoverer of ear acupuncture (Fig. 6).

In 1958, Xiaolin Ye wrote an article in the *Shanghai Journal of Traditional Chinese Medicine* entitled “The New Discovery of Acupuncture Abroad—the Introduction to Auricular Acupuncture Therapy.”¹⁹

Also in 1958, the Nanjing Army Research Team initiated a clinical trial with more than 2000 patients and documented the effectiveness of the Nogier method. This was the origin of the Chinese Ear Acupuncture Chart (Fig. 7) as it is known today and approved by the WHO. In this chart there are areas of different sizes and shapes, inscribed with letters and numbers derived from ear anatomy (e.g., Helix, Anthelix, Concha, or Lobe). The same system was used in 1983 with slight modifications by the University of California–Los Angeles (UCLA) and in 1990 by Terry D. Oleson, PhD, and Richard J. Kroening, MD²⁰ (Fig. 8). All have the disadvantage that most of the areas are relatively large, so precise needling is difficult. Two other renowned researchers—Drs. Romoli and Mazzoni (2009),³ and Dr. Alimi (2017)²¹—chose other ways to represent the auricular points on charts. Radial

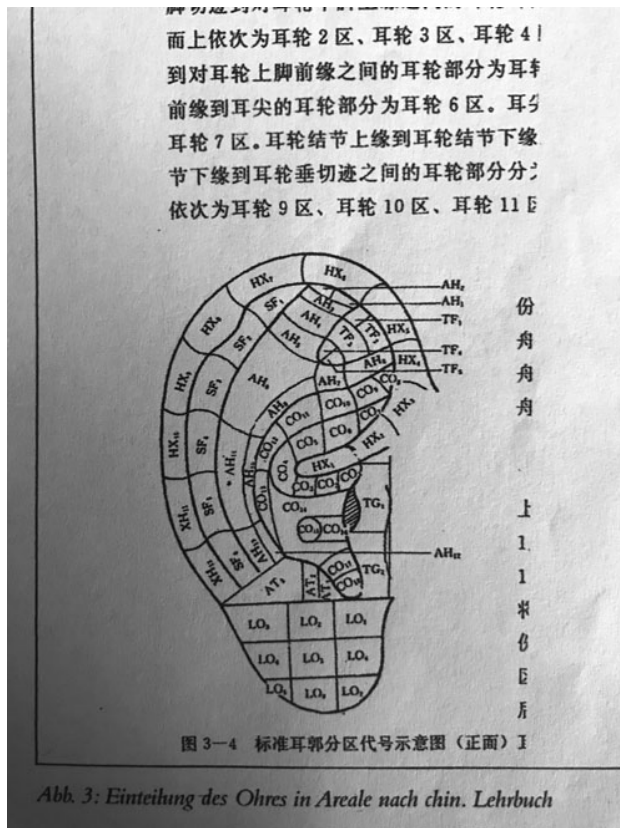


FIG. 7. Chinese Ear Chart in use today recognized by the World Health Organization, with large areas. © VR China, may be reprinted without copyright.

lines originating from the middle of the tragus spreading toward the rim of the ear comprise what Dr. Alimi called a *Segmentogram* (Fig. 9). In Dr. Romoli's chart, the lines radiated from Dr. Paul Nogier's Point Zero at the root of the Helix and outward. Drs. Romoli and Mazzoni named their system a *sectogram* (Fig. 10).³ Both ear charts have a principal problem: In a radial design, the areas more distant from the center become larger and therefore less precise. In 1968 by chance, Dr. Paul Nogier observed an alteration in the pulse quality while examining the reflex zones of a patient with a pressure probe. This phenomenon was triggered only by stimulation of pathologically altered acupuncture points. As Dr. Paul Nogier assumed initially that it was a cardiac reflex that changed the pulsation, he called it the *Réflexe Auriculo-Cardiaque* (RAC).²² He later changed the term to the *vascular autonomous signal* (VAS), as it is actually a reaction of the sympathetic/parasympathetic nervous systems.² In 1994, Frank R. Bahr, MD, suggested, at the International Congress of Auriculotherapy and Auriculomedicine in Lyon, France, May 27–29, 1994, to name the reflex “Nogier's reflex” to honor Dr. Nogier.²³ This characteristic pulse alteration was first described 1945 by the French physician René Leriche, MD, a professor of vascular and experimental surgery in Lyon, France.²⁴

Several renowned researchers—such as Maximilian Moser, PhD, et al. (1998, 2017)^{25,26} and Gerhard Litscher, MSc, PhD, MDsc, et al. (2014)²⁷—attempted to clarify the physiologic origins of the VAS, but even in the latest

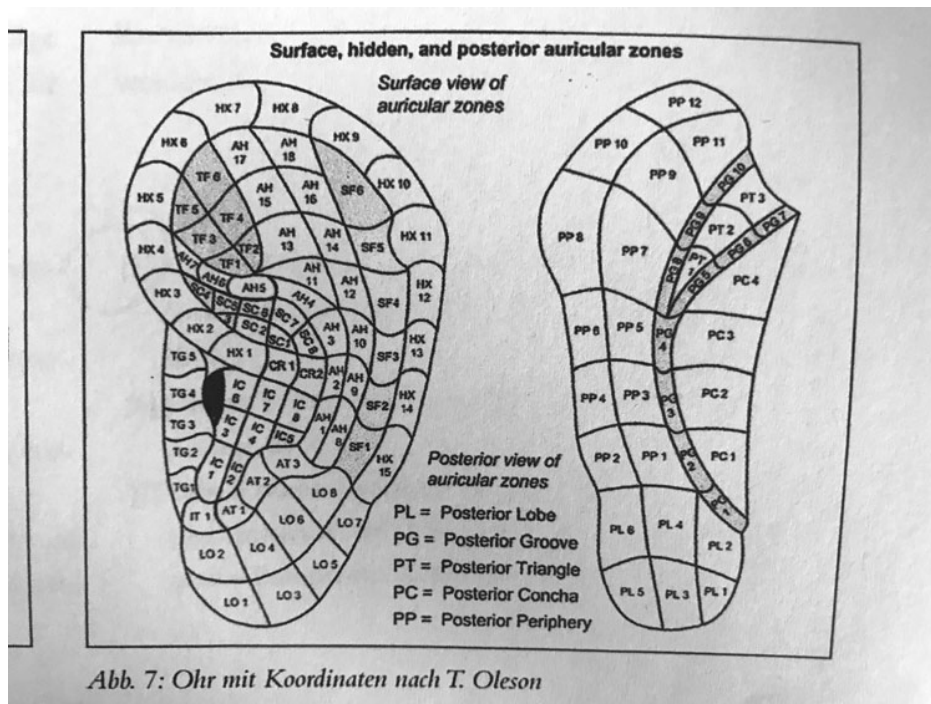


FIG. 8. Ear chart according to Terry D. Oleson, PhD, with areas following anatomy. © T. Oleson; reprinted with Oleson's permission.

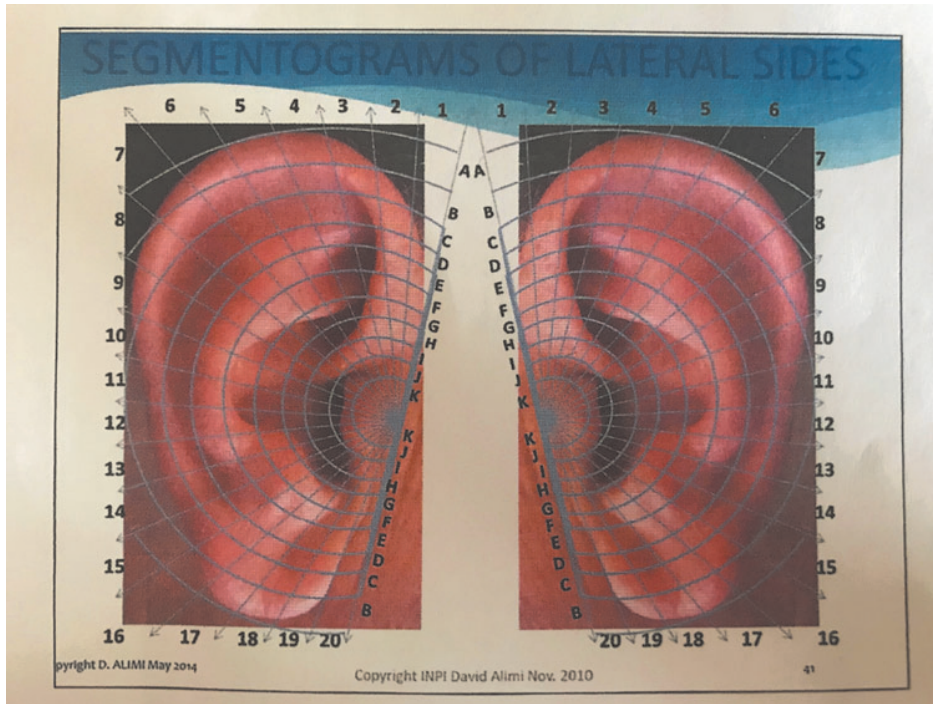


FIG. 9. Segmentogram according to David Alimi, MD, with lines radiating from the Tragus © D. Alimi; reprinted with Alimi's permission.

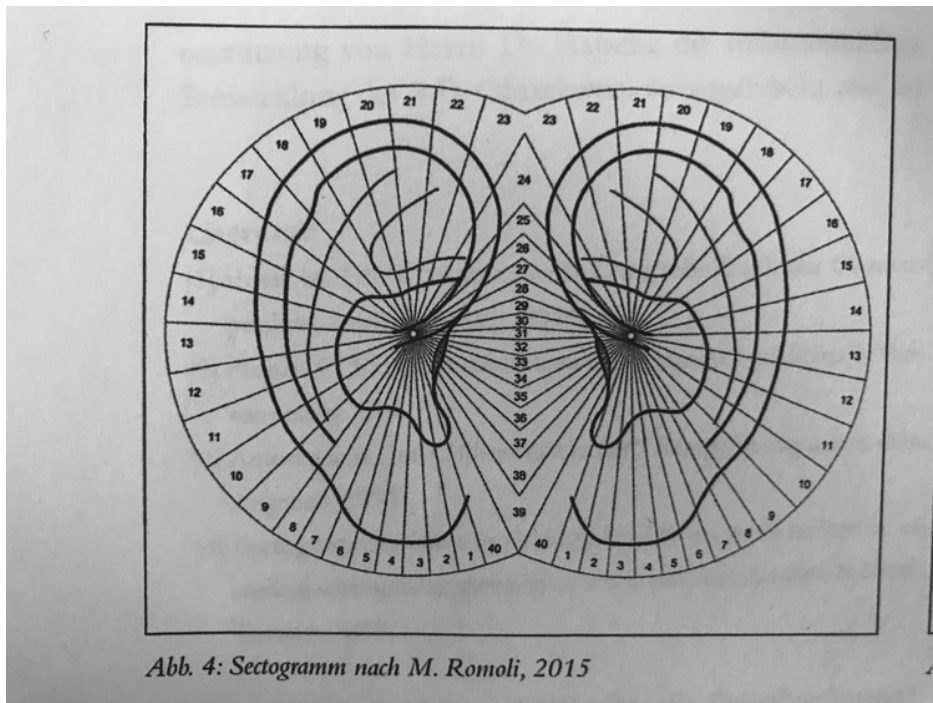


FIG. 10. Sectogram according to Romoli, with lines starting from Point Zero. © Bahr/Wojak; reprinted with Bahr's and Wojak's permission.

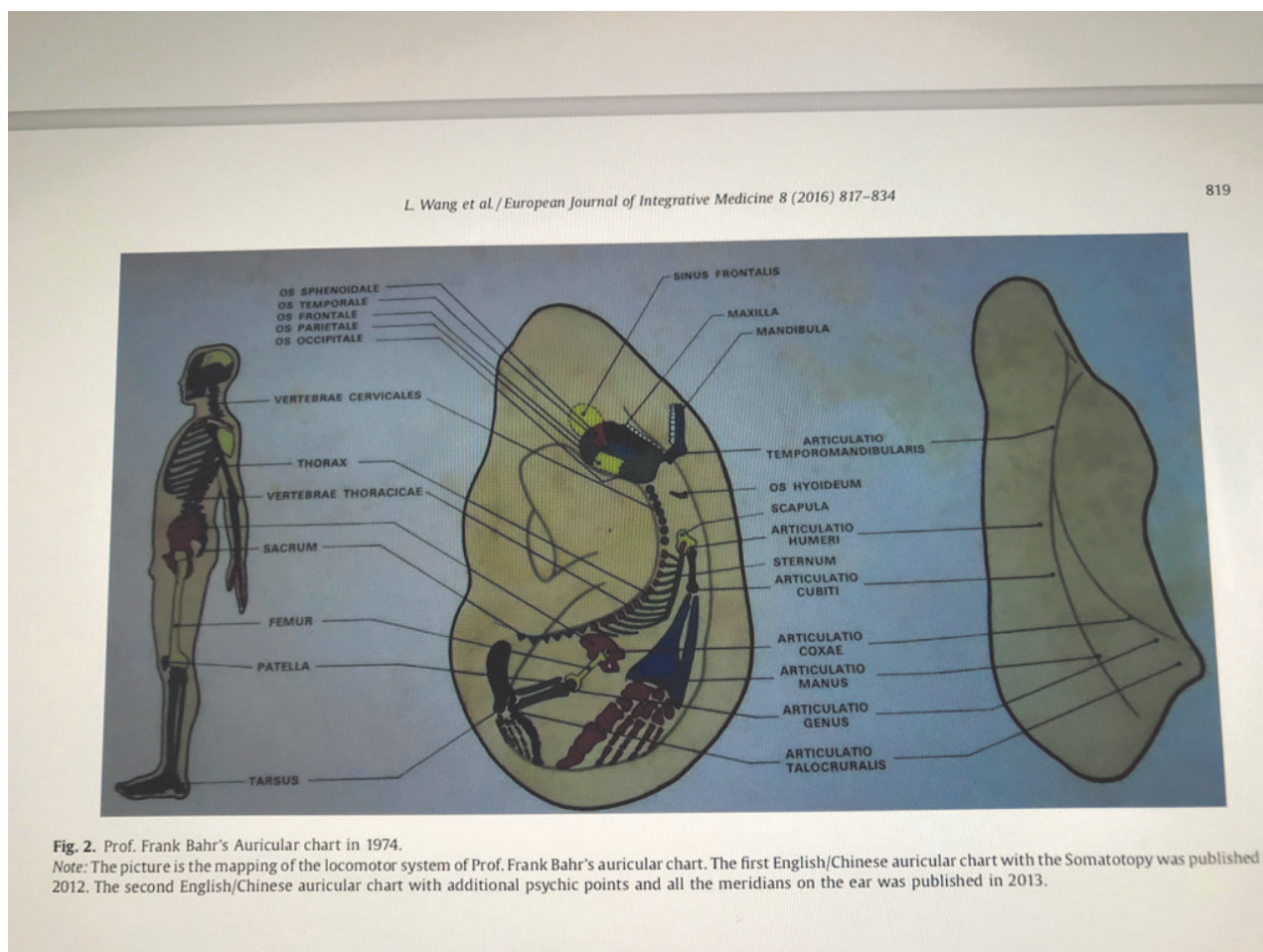


FIG. 11. *Loci auriculomedicinae* from Nogier/Bahr/Bourdiol in 1975 © Bahr/Maisonneuve, reprinted with Bahr's permission.

publication of Dr. Litscher, et al. (2018),²⁸ the phenomenon was not yet explained fully.

The first complete ear chart was the famous “*Loci Auriculomedicinae*” (Fig. 11),²⁹ a colored drawing published in 1975, which presented upside-down depictions of the front and back of the ear. The upside-down depiction emerged because, at that time, the therapist was sitting at the head of the patient. Each part of the anatomy was presented separately as follows: Osteology; Myology; Splanchnology; Angiology; and Neurology.

In 2014 Raphael Nogier, MD, (the son of Dr. Paul Nogier) wrote an article entitled “How Did Paul Nogier Establish the Map of the Ear?”³⁰ At least in the case of the *Loci* chart, it is possible to view a detailed depiction of how Dr. Paul Nogier established the ear chart: A woman lay in the middle (serving as a patient), 1 doctor took the RAC pulse on her right side, 1 doctor took the pulse on her left side (Drs. Paul Nogier and Bahr), and a third doctor (Dr. Bourdiol) drew the chart.²⁹ To obtain the specific points of the different organs one needs a homeopathic preparation of

the organ in 3 ampoules. One ampoule is put on the forehead of the patient, the patient holds another one in his or her hand, and the investigator uses the third ampoule to check the ear of the patient. The investigator will find exactly 1 point reacting with a RAC or VAS representing the organ in question.

The explanation for this procedure is that, putting information above the clavicular line of the patient (e.g., on the forehead) means “canceling,” putting information in the periphery (e.g., in the hand) of the patient means “adding information.” This procedure confuses the involuntary nervous system completely—the only point on the ear with resonance to the test ampoule will produce a RAC; this, this is the point being sought. This method sounds complicated, it is a simple way to find specific points on the ear. Although this is the detailed description of the origin of the *Loci* ear chart, which is quite complete, it is still not precise enough to transfer information for scientific and tutorial purposes.

A detailed analysis of the similarities (and the differences) between the standards for auricular acupuncture points of the

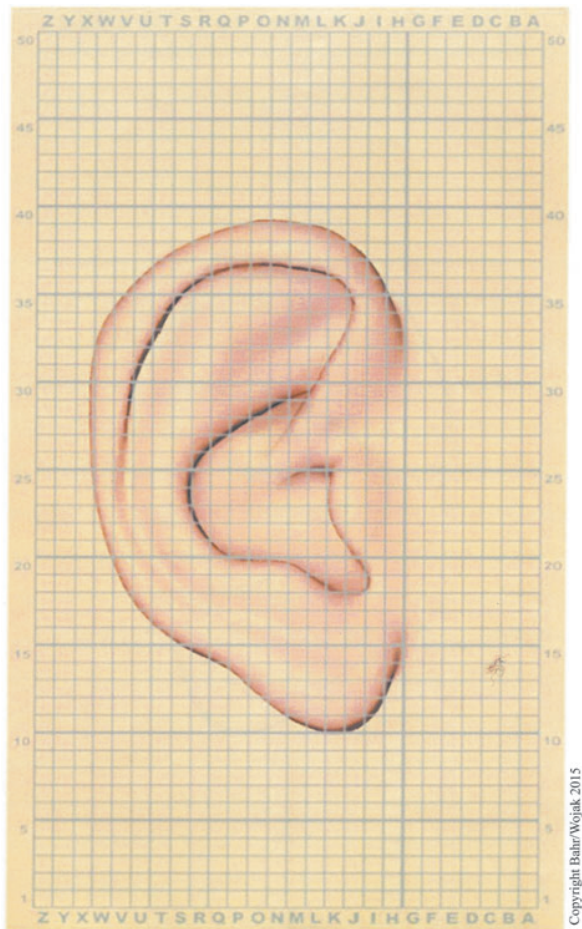


FIG. 12. Coordinate for the ear by Bahr/Wojak. © Bahr/Wojak; reprinted with Bahr's and Wojak's permission.

World Federation of Acupuncture–Moxibustion Societies and the European System of Auriculotherapy Points according to Drs. Paul Nogier and Bahr was published in 2016 by Lei Wang, PhD, and coauthors in the *European Journal of Integrative Medicine*.³¹

To describe the exact position of ear acupuncture points, Dr. Paul Nogier had already designed an ear chart with coordinates in 1981.¹ It was Winfried Wojak, PRC—a doctor of dental medicine and honorary professor at the Nanjing University of Chinese Medicine—who developed the coordinate system further and presented it, together with Dr. Bahr, in 2006 at a conference of the Nanjing University of Chinese Medicine, entitled *New Thoughts and Approaches to the Future Developments of TCM*.³²

In 2015, a new 2-dimensional Coordinate Ear Chart was ready and was published in the *Journal of Acupuncture and Auriculomedicine (ZAA)* 2016³³ (Fig. 12). A grid of lines was put across the ear and its immediate surroundings, forming small squares exactly defined by a coordinate system with letters horizontally and figures vertically. Using that system any auricular point can be defined precisely (e.g., the Eye Point: L-15; or Point Zero: N-26). The Coordinate Ear Chart did not only allow a hitherto unknown comparability across language barriers, but this new chart also simplified lecturing and teaching methods.

A further development was the 3-dimensional (3-D) ear first presented by Dr. Oleson.³⁴ It was Dr. Wojak, the German dentist and lecturer at the EATCM and DAA, who applied the most-sophisticated scanning and information technology to create a perfect 3-D ear (Fig. 13). This tool is in a trial phase at the DAA with excellent results so far. With

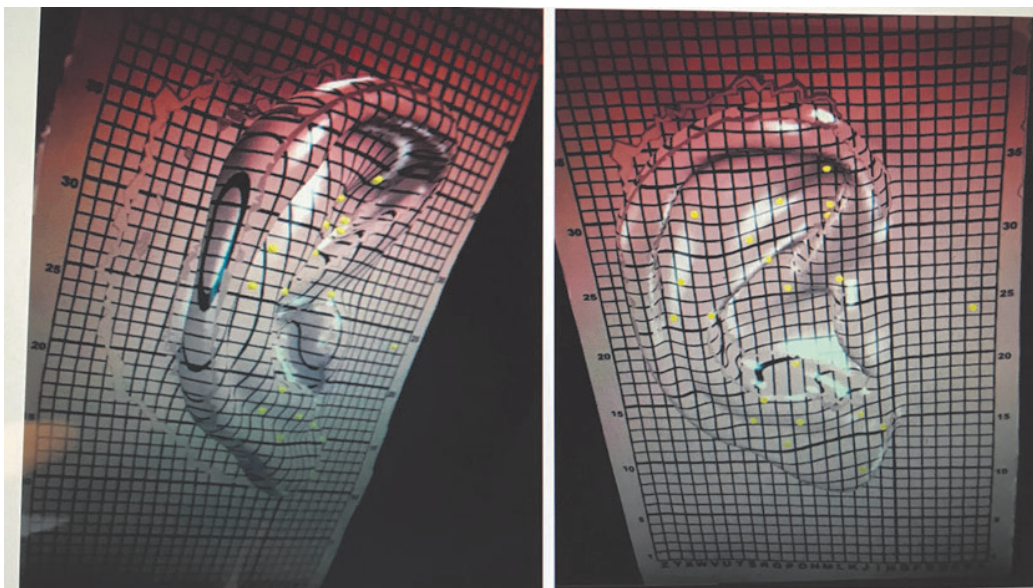


FIG. 13. Three-dimensional ear by W. Wojak. © Wojak, reprinted with Wojak's permission.

新耳针图解

国际坐标
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THE NEW EAR ACUPUNCTURE

With international coordinates
© Prof. M.H.C./China Dr. Frank Bahr

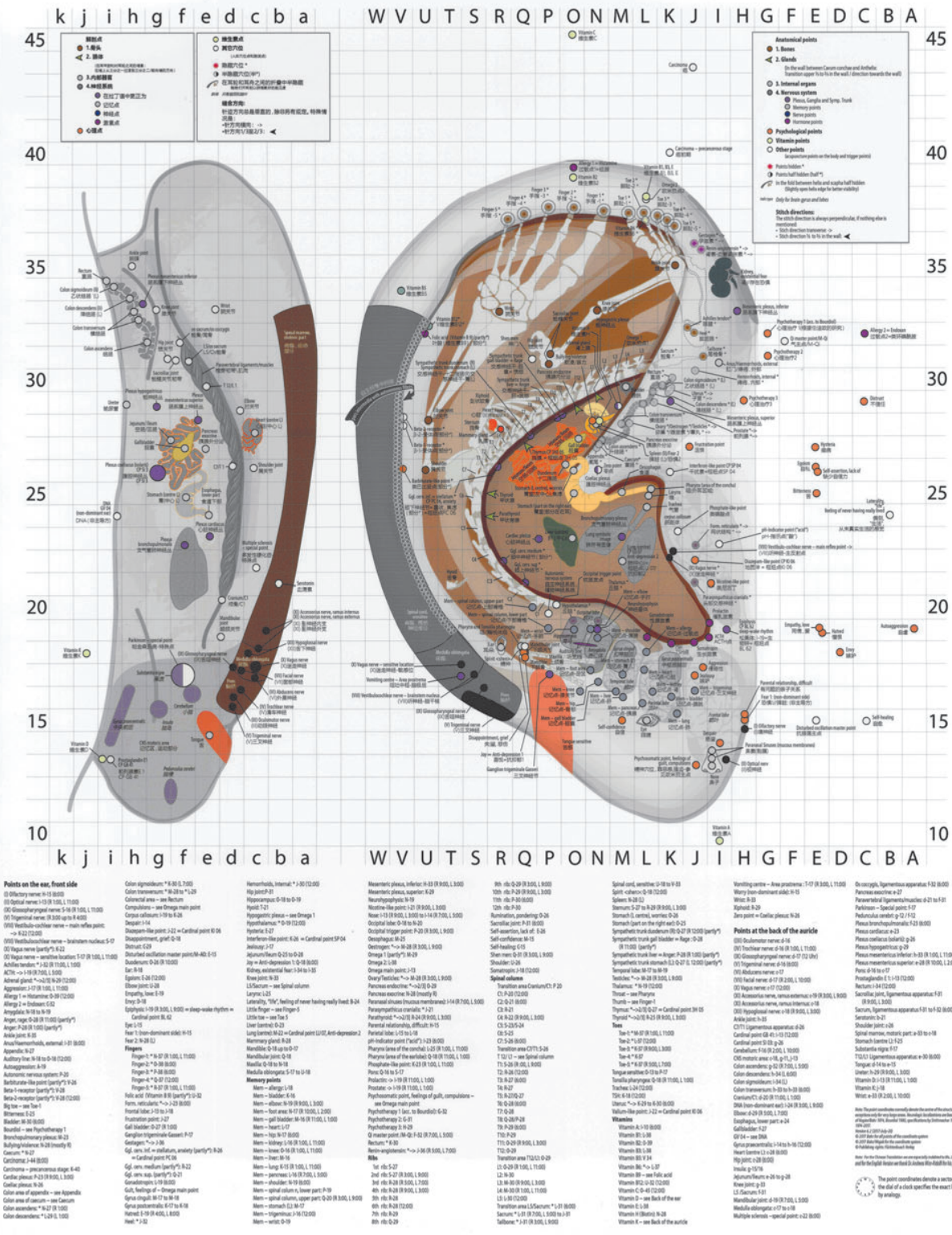


FIG. 14. The new ear acupuncture (with coordinates). © Bahr; reprinted with Bahr's permission.

the corresponding software,† the ear may be turned in all directions to visualize any desired acupuncture point (personal communication from Dr. Wojak, April 7, 2019). All the meridian points on the ear—“psychic”‡ points, homeopathic points, and floral essence points—were defined by Dr. Bahr.³³

All of these charts were translated into English by the author of this article and into Chinese by his contacts. These charts were brought to China (2012, 2014) and presented in the author’s lectures at the Beijing University.⁴ Another benchmark for finding the precise acupoints was the translation of Beate Strittmatter, MD’s *Precise Pocket Atlas of Ear Acupuncture, Based on the Works of Nogier/Bahr* into Chinese.³⁵ It was translated by Xiazhen Guo, MD and Yan Kong, MD.³⁶ In November 2014, this book was given to the Chinese public at an event of the Beijing University of Chinese Medicine on November 19 2014 called the “Prof. Wirz[Ridolfi] book donation ceremony” in front of a large audience. The book, formerly published by the People’s Military Press is still available, and a second edition is in preparation with a different publisher.

The culmination point in precision of ear cartography is the New Ear Acupuncture Chart (Fig. 14) of Dr. Bahr, which was shown for the first time at the Ninth International Symposium on Auriculotherapy, in Singapore, August 10–12, 2017. It was the honor of this author to introduce it to China at the International Summit Forum on Clinical Application of Acupoints, at the Beijing University, School of Acupuncture and Moxibustion, August 25–27, 2018, in Beijing, China.³⁷ This chart has the potential to put an end to the endless discussions of acupoint localization—if the chart is generally accepted. With its coordinates defining the relatively small squares, the probabilities of targeting exact points are high, even if someone is not familiar with the VAS, RAC, or Nogier reflex. The coordinates of all points are indicated at the bottom of Dr. Bahr’s new ear chart. With this precise ear chart, preferably in combination with the VAS, it is nearly impossible to miss the right acupuncture point; thus, the quality of treatment with auriculotherapy will improve tremendously.

DISCUSSION

Let me quote Baixiao Zhao, MD, PhD, the dean of Beijing’s School of Acupuncture and Moxibustion. Pinpointing the reason why auricular medicine has not yet reached the acceptance it deserves accurately, Dr. Zhao wrote in an article in *Medical Acupuncture*,³⁸ in 2018:

†Visit w.wojak@gmx.de to obtain the software.
‡“Psychic,” as used here, means “psychologic.”

However, because the mechanism and essence of auricular points had not been clarified clearly, naming and locating of the auricular points in China and abroad had not reached a consensus, which also seriously affected the spreading, communicating, and in-depth studying of auricular acupuncture.³⁸

He concluded: “Auricular acupuncture therapy is an important part of Traditional Chinese Medicine. ... It has been considered to be a valuable asset in the treasure house of Chinese medicine.”³⁸ The article in which he made this statement shows that the acceptance of ear acupuncture in China is progressing.

CONCLUSIONS

Precise ear charts are doubtlessly primordial; as Dr. Raphael Nogier complained in his article, the different ear charts lead to confusion and concluded: “Auriculotherapy is based on the validity of the ear cartographies.”³⁰ More-precise information about the specificity of ear acupuncture points will be available with more studies like the ones by Dr. Alimi et al. in 2002 and 2014)^{39,40} and by Dr. Romoli et al., in 2015,⁴¹ who used functional magnetic resonance imaging (fMRI) to measure brain activity during ear acupuncture. The pioneer of fMRI to measure brain activity was Yoshida et al. in 1995.⁴² In addition, with better comparable ear charts, the credibility of ear acupuncture would increase considerably, as these charts would bring some unanimity to the point locations. Acceptance in the scientific world is certainly important, but the ultimate goal must be to achieve good treatment results for patients. In auriculotherapy this is only possible if the needles or laser beams are applied exactly in the right places. To succeed, an auriculotherapist needs very precise ear charts and—even better—the ability to use the VAS in pulse palpation.

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AUTHOR DISCLOSURE STATEMENT

No financial conflicts of interest exist.

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BOX 1. IMPORTANT DEFINITIONS

Clarification is needed regarding the terms *ear acupuncture*, *auriculotherapy*, and *auriculomedicine (auricular medicine)*, which are often used without clear definitions. Ear acupuncture is a general term describing all diagnostic and therapeutic measures using points on the ear, even without any defined cartography. Auriculotherapy is the term preferred by the French school of ear acupuncture and its followers although auriculotherapy can mean only therapeutic interventions on the ear. In 1981, Paul Nogier, MD, himself wrote a book entitled *From Auriculotherapy to Auriculomédecine (De l'Auriculothérapie à l'Auriculomédecine)*. Therefore, the modern term that should be used is Auriculomédecine, referring to the modern and comprehensive form of ear acupuncture—including diagnosis, treatment, and scientific studies using points on and around the ear—which encompasses a whole complete and independent branch of medical science.