A V A D E M E C U M

FOR

Singing-Teachers and Pupils

BY

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A Vademecum for Singing-Teachers and Pupils

“The best comment on preparation is the result.”

INTRODUCTION

ON April 22nd, 1855, our venerable Master, Manuel Garcia, presented to the Royal Scientific Society of London some physiological experiments bearing upon the production of the human voice. On May 24th of that year, he delivered an interesting lecture on the same subject, at a public meeting of the Society. Garcia, while seeking a practical way of looking into the throat, had invented a primitive instrument, which, however, when perfected, became the actual laryngoscope. Fastening a small mirror to a handle, he pressed it with one hand against the soft palate and precisely upon the uvula. Then, taking a larger mirror in the other hand, he caught the sun's rays and directed them against the small mirror inside the mouth. This mirror, thus illumined, on reproducing the image of the glottis, conveyed it to the other glass, upon which the action of the vocal cords during the production of a sound,* as well as while resting in their natural position, could be distinctly observed.

Although scientifically incomplete, the observations and the experiments made by the great singing-master laid the foundation for a new pathologic system of treating diseases of the larynx, and filled a noteworthy page in the story of human progress. Hereafter, laryn-

* The term “sound” is employed throughout as equivalent to “musical tone.”

Introduction

gology could be practised on a broader and more assured experimental basis.

But Manuel Garcia, when trying to investigate the mechanism of the vocal organ, aimed exclusively at establishing a rational physiological system for the production and development of the voice in connection with the art of song, and proposed putting an end, if possible, to the dangerous interference of dabblers. We regret having to place on record the fact that the great man did not see his aspirations realized. On the contrary, the new scientific path he had opened to the cultivation of the human voice fell a prey to empiricism; thousands of undesirable meddlers seized upon the subject and brought about confusion, and, as a consequence, the inevitable decline of the finest of all the fine arts.

First Part

CHAPTER I

THE works on voice-production, and the singing-methods, so different from each other, so contradictory, and often so amusing, published in Europe, as well as in America, during the last fifty years, are so numerous that, if but one of every hundred of the clever laryngologists and learned teachers who wrote them had really discovered some true and valuable scientific principles upon which the authors could positively depend to found *an exact* and *inexpugnable* theory, we should have at present a superabundance of eminent singers of both sexes. Unfortunately, this is not the case. We may, on the contrary, assert that, since the majority of the professors of singing busy themselves with scientific investigations, and many physicians, instead of studying the pathologic phenomena of the vocal organs for the benefit of suffering humanity, insist upon disclosing and explaining the physical and physiological principles of the production of the human voice—every one of them presuming to have discovered the “philosopher’s stone”—there prevails, not only complete confusion on the subject of “voice-culture,” but also a dearth of good singers (especially of singers of the fair sex), in both the Old and the New World; whilst the best traditions of the Art of Singing are, with very few exceptions, nearly lost.

Hence we are led to conclude that the cause of this decay, resulting from the wavering ideas on the subject, is to be ascribed to the superficially-scientific knowledge of teachers *as singers*, on the one hand, and to the lack of experimental practice on the part of the “*not singing*” *doctors*, on the other.

And, oddly enough, whilst the professors of singing endeavor to

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impart weight to their publications by quoting as many opinions and names of scientific men as they can, the doctors, in turn, adorn their books with the names and views of the most celebrated singers of the day, even occasionally dedicating their works to some famous artist. This fact, I believe, furnishes evidence enough that none of the authors feels deeply convinced of his own opinions and definitions; the doctor lacking the authority of the singer, and the singer that of the doctor.

Some day, perhaps, some celebrated scientific man, gifted with a first-rate voice and a clear and comprehensive singing-method, will appear, and, giving experimental public lectures enriched with demonstrations of the vocal phenomena, will succeed in unravelling the tangled skein of opinions on voice-culture—provided he has already formed and produced an uninterrupted series of good singers.

But there is another serious evil prevailing in the field of song, in these days of so-called scientific and social progress, when pen and ink are used by an army of compilers without individual inventive spirit. These modern prophets, gathering, here and there, opinions, scientific expressions, and quotations from the many works published in every language and in every country on the subject, strive to make themselves known through the press, not so much for the sake of investigating the truth, as with intent to eke out, if possible, a comfortable livelihood. A veritable army of literary men and women, professionals and amateurs, without being precisely singing-teachers or practising physicians, publish, indiscriminately, resounding articles or books on “voice-production” and “voice-culture,” and thus disseminate and increase the hurly-burly of principles and rules already mentioned. Many of these writers, striving to obtain a position through the general ignorance of the public, take advantage of the credulity of the age. This credulity, the outcome of the modern mania for novelty, and the want of principles mentioned by some authorities, encourages a legion of visionaries of every kind. Some of them are undoubtedly ingenious, and are convinced that they have discovered the secrets of nature. But, to accomplish this, they lack

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the instinctive penetration and deep knowledge of real scientific men, as well as the practice and experience of professional singing-teachers. Consequently, their improvisations are a mixture of accurate and erroneous ideas, confused, superficial, and often contradictory.

Those that search for novelty generally fasten upon one point out of many, and build upon it a whole system of their own, submitting to it or setting aside everything that does not bear upon their conception or agree with it. It would be impossible to enumerate, even approximately, the different systems excogitated under the pretence of a discovery of the secret how to render the production and culture of the voice easy and perfect. The evil resulting from these effusions is incalculable.

It would certainly be unjust to deny that modern physiological investigation has furnished a broader basis for studying the phenomenon of the human voice. But the material furnished by new scientific discoveries must be subjected to severe criticism, and compared by the practical teacher with such real facts as are positively demonstrated by long experience, accredited traditions, and approved results. We cannot and must not throw away all that constitutes the inheritance of ages, all that has furnished evidence of practical value; but must use the new ideas to complete and perfect the old ones.

CHAPTER II

A SUMMARY demonstrative physiological explanation of the vocal instrument and its phenomena must be of great utility to new scholars, since the notions these students generally bring with them are utterly absurd. However, the teacher must avoid overloading the comprehension of the pupils with long and complicated dissertations, which would only produce confusion in the mind of the neophyte. It is, therefore, more logical that beginners, after acquiring some general anatomico-physiological notions concerning the structure and workings of the vocal instrument, be permitted to address such questions to their masters as may be suggested by difficulties encountered in their studies. In such cases, however, the teacher must present his explanations in a practical, rather than in a theoretical, way, the important point being to acquire the assurance that the pupil thoroughly understands what the master means. Only in this manner can the work be really beneficial to both parties. In the opposite case, the teacher acts only as an intellectual motor for the moment, and the pupil becomes a parrot, and never acquires independence or any initial conception of his own.

In this last instance, the pupil, on leaving the school, instead of carrying on the development of his particular personality, prompted by the principles and rules impressed on his mind by his master, must, for want of knowledge and conviction, fall back rapidly into the primitive confusion of opinions and definitions, and will never rise above mediocrity. As, nowadays, every one meddles with the art of singing, some of the new advisers will speedily lead him astray. Tuition of the vocal art, like all æsthetic studies, must be considered as pure mental work ; therefore, its application must always be adapted to the particular intelligence, as well as to the right degree of moral culture and instruction, of every single pupil.

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In accordance with the foregoing considerations, we reach the conclusion that, if an intelligent and conscientious teacher wishes to be equal to his task and ready to answer every question addressed to him by the scholar, he must first prepare himself therefor by serious theoretical studies, as well as by practical experiments upon his own vocal organ. He must, in fact, first and foremost, acquire a clear conception of what he has to explain and demonstrate to his charges, and a profound conviction on the same head. So prepared, he will be able to establish his own system, which, however, can be absolute only in principle, being subject to the infinite modifications required by the different intellectual and physical dispositions of every single pupil.

The human voice, being a living physical instrument, is liable not only to millions of exceptional modifications resulting from the different peculiarities of every single organism, but to climatic influence, to bad habits, and to physical disorders, which can alter its natural characteristics. Therefore, whatever may be the degree of a teacher's theoretical knowledge, he will never compass an important and continuously satisfactory result, if he lack the three indispensable qualities that act as guides for the human intellect; namely, *instinctive intuition*, *penetrating reflection*, and *long experience*. The teacher may utilize all the precious discoveries made by modern science, but on condition that he understands them, and provided he knows *where*, *when*, and *how* they are to be employed.

CHAPTER III

THE great confusion and erroneous views governing the choice of a teacher are undoubtedly to be included among the principal causes of the decline of the beautiful art of song. The ease with which one becomes a "professeur de chant" without undergoing any examination whatever, and without obtaining any authorization to teach, has thrown this difficult art into every one's grasp, and made its practice a mere expedient for getting a comfortable living.

Every good and practised musician may certainly possess more or less taste for singing, and, consequently, may furnish excellent advice to a professional singer as to the way of rendering a phrase or imparting to it more effective dramatic expression. He may also be useful to a singer for the interpretation of a new part in an opera, or for the rendering of a new song. But if the singer meet with a technical difficulty, he cannot explain whence it comes or how an obstacle is to be removed. In consequence of this, a good musician may be entitled to give æsthetic advice on vocal music, but he cannot give lessons in singing—that is to say, teach beginners—unless he has prosecuted indispensable studies, and especially not if he has never sung himself, and this without regard to the kind of voice he may possess. It would surely be much more advantageous for art if musicians, before undertaking the difficult task of "placing" and developing the voices of their scholars, and assuming a moral responsibility for their artistic future, would prosecute the necessary studies, each testing at first his inductions upon his own vocal organ, as already suggested.

But, alas! the great majority of music-masters and orchestral directors believe that singing is *an absolutely musical, and not a vocal, question*.

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With regard to laryngologists who publish works on "voice-production" and "voice-culture," I declare openly that they betray their moral, human, and scientific mission, which should be to visit patients and cure diseases of the throat. Instead of so doing, through the publication of books on "voice-production," complicated with scientific quotations and dilemmas, and consequently out of proportion to the general standard of instruction, they create unconsciously a number of physical disorders and diseases among singing people, and thus contribute to the decline of the art of song. Teachers and scholars, reading a work published under the authority of a well-known laryngologist's name, try to adopt the new theories proposed by the author, understanding them but partially, incorrectly, or not at all, and viewing the new dilemmas in the light of their own intelligence and knowledge. In so doing, through the inadequate interpretation of what they read, they invent false theories of their own, and ruin thousands of the best voices.

It would be worth while to make an inquiry founded on this assertion, and to estimate from the immense number of deceived and disappointed students that every year, in Europe as well as in America, have lost or are losing their voices, the expenditure of time and money, and the destruction of all hopes of an artistic career, resulting from what we may call the modern plague of scientific empiricism prevailing everywhere in connection with "voice-production."

Female voices being more delicate and difficult of cultivation than male voices, the number of deluded young men is far less than that of young women who have been and are led astray, whilst the inhuman deception goes on every day and everywhere. The sad consequences are, of course, of a different nature in the two cases. A man who has lost his voice can seek a livelihood in another direction; but a young woman who has been flattered and deceived by her teacher, and has indulged during many years in vain dreams of becoming a Patti, a Nilsson, or a Melba, without thinking of anything but future triumphs and profits as a celebrated singer, after having fruitlessly spent the best years of her youth in study, is fitted for

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nothing else. After such a trial, if she be not endowed with thoroughly honest and moral sentiments and sound principles, she will easily wander from the right path, and attempt by other methods to secure the splendid existence she has pictured to herself for so long a time.

We must not forget the pecuniary sacrifice made by the parents of the young students for many years, to ensure their children's brilliant future—sacrifices often ending in the ruin of whole families. Finally, the larger part of these disappointed young people, finding it impossible to make their way as singers, become teachers, thus disseminating, more and more widely, the erroneous methods of their masters, and this in a still more erroneous way.

For this terrible moral and social calamity the legislators of different countries should bring a swift and salutary remedy. And this calamity is brought about, on the one hand, by the vanity of so many laryngologists that meddle with "voice-production," some of them even going so far in their expositions as to give "music-vocal exercises," instead of medical prescriptions. A conscientious laryngologist must, indeed, study and investigate the anatomical structure and physiological working of the human vocal apparatus, but he should remain on pathological ground. The production of single sounds of different pitch should be quite sufficient for his investigations in formulating a diagnosis.

On the other hand, this sad state of things results from a lack of conscientiousness and knowledge, as well as from the rapacity of many so-called teachers of singing.

I will not close my exposition without mentioning a very dangerous false opinion prevailing in every country in relation to the art of song: I refer to the idea that "a good singer must be a good teacher."

No doubt a celebrated singer can generally give precious practical and æsthetic counsel to beginners, by reason of his long experience; but to impart his own knowledge to others, he must be able to explain the technical means through which these ideas can be acted

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upon. Hence, a great difference is to be recognized in this respect between a singer who has gone through an elementary, gradual, and scientific school, and another who, equipped with a beautiful and free voice, uses it instinctively, even as, by his natural musical and histrionic gifts, he attains at times the highest reaches of art, though remaining always unequal and incomplete in some regard. Celebrated singers of this type, aided by the so-called dramatic texture of modern vocal music, are in the majority nowadays; and in Germany, where they abound, they are called "Natursänger" (natural singers). But such vocal artists never sing during as many years as do the schooled ones; and the plain reason is, that trained performers have learned how to sing with the *interest* of the voice, and never encroach on the *principal*, that is to say, never force the voice, and religiously refrain from "pulling out the registers." In a word, they know how to manage their voices. The "Natursänger," on the contrary, being ignorant of the physico-psychological requirements of the vocal organ, and wishing to produce effect by every means, waste the principal of the voice at once, forcing it continually as much as they can, and carrying it violently beyond the natural limits of the registers.

In fact, the schooled singers, knowing the mechanism of their vocal apparatus, having gradually developed its compass, flexibility, and volume, rendering it susceptible of response to all the different gradations and contrasts of light and shade of their phrasing, according to the rules of the *bel canto*, never force their voices, and produce an uninterrupted æsthetic effect, resulting from the purity, the continuity, and the facility of the sound-production. The "natural singers," on the contrary, not being able to sing *piano*, and produce the same contrast of expression as do the schooled singers, are monotonous, aiming only at the modern tasteless and anti-æsthetic dramatic exaggeration, and endeavoring to reach, through force, effects that good singers obtain through æsthetic sensitiveness and expression. Consequently, "natural singers," never sparing the voice, lose it within a more or less brief period.

CHAPTER IV

To obtain uninterruptedly successful results, teachers must present to their pupils only one *difficulty* at a time, and insist upon making them overcome the obstacles they encounter, by placing the same before them in *natural* and *progressive* order. This is an immutable general precept in teaching. Therefore, both teachers and students are particularly urged to prolong as much as desirable the practice of the very first elementary vocal exercises upon a slightly darkened *A*, and not to begin to sing with words until the voice is sufficiently developed in power and flexibility, as well as equalized throughout its compass; and until the registers are nearly blended and the vocal mechanism has acquired sufficient facility. In order to obtain this fundamental result of *building the instrument before playing upon it*, teachers, after employing *Elementary Exercises* to place the voice and determine the limits of the registers, must pass to the second part of the physico-mechanical work, making pupils sing a series of plain and easy *Vocalises* adapted to the character and compass of each particular voice, and always upon *A*. According to the principle already enunciated, of presenting to the pupil the difficulties to be overcome in natural, progressive order, the teacher may later select some new and more difficult *Vocalises*, according to the progress made by each voice. By singing through a series of adequate *Vocalises* (*Études*), pupils continue to practise and perfect the transmutation and the blending of the registers. Watching and directing the voice at first under the guidance of the teacher, the pupil will by and by do this automatically, in consequence of the habit the muscles of the vocal organ will have acquired of following the mental impulses.

This is exactly the same physico-psychological process that occurs when one learns to play upon an instrument. Here, too, in the be-

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ginning, the fingers must be watched and directed ; but by and by they become accustomed to obey instinctively the mind of the player, and to execute the most difficult passages on the piano, or on any wind or string instrument, without requiring particular attention. Through the course of Vocalises, pupils will also develop and perfect the voice throughout its compass, and acquire at the same time the indispensable knowledge of different tempos and rhythmical forms, as well as pure intonation of the numerous intervals. They will simultaneously be initiated into comprehension of musical phrasing and style. In a word, the Vocalises, if well chosen and methodically employed, being composed, like Études, for different instruments, with a special purpose, cannot fail to produce a similar technical and musical result.

Being strictly prepared in this way, pupils, beginning to sing with words, will no longer be preoccupied with forming and directing every single sound, or with the change of the registers, but will be enabled to concentrate all their attention upon the clear production of the different vowels and the marked and distinct articulation of every consonant, without interfering with or disturbing the continuity of the sound.

The root of the tongue being firmly fastened to the tongue-bone, an attempt at singing with words before the action of the tongue and that of the larynx and the glottis have become independent of each other, makes the articulation of the lingual consonants interfere with the free emission of the sound. Hence the absolute necessity of continuing to sing on *A* until this independence has been acquired. If this elementary technical principle is not rigorously observed, the singer will be doomed, throughout his whole career, to sacrifice the *word* to the *sound*, or the *sound* to the *word*.

Second Part

PRECEPTS TO BE IMPARTED TO PUPILS IN A CLEAR, PRACTICAL, AND
PRECISE WAY

CHAPTER I

POSTURE OF THE PUPIL WHILE STUDYING

Pupils whilst singing must assume the most natural posture. The body must be held upright, likewise the head. The shoulders are to be drawn back without constraint, and the chest to remain quite free. Any stiffness of the body must be avoided, in order to secure the complete independence of the organs of phonation during their working.

CHAPTER II

POSITION OF THE MOUTH WHILE SINGING

THE "smiling" mouth in singing, approved by many teachers, both ancient and modern, is absolutely contrary to the laws of acoustics, and consequently hinders the production of æsthetic, rounded sounds, homogeneous in their succession.

The lips, being the exterior extremity, the orifice of our vocal instrument, are intended to give final shape to the sound before it emerges from the mouth.

The shape that we give to the interior resonant tube of our vocal apparatus, from the larynx's cavities to the edge of the teeth, in pronouncing the five principal vowels, A—E—I—O—U, and their combinations (diphthongs and triphthongs), is not sufficient to distinctively produce the different sounds. It is only by the peculiar shape imparted to the lips that the sound of every vowel becomes determined and perceptible, and I defy any one to change the vowels without altering the shape of the lips. Well, then, as in smiling the lips must be stretched out and assume exactly the elongated-square (*carré-long*) shape that they take on pronouncing *E*, the sounds so produced can never be round, homogeneous, and æsthetical. This form of the lips can produce only a quality of sound that the French call "voix blanche," and the Italians, "voce sgangherata." The only vowel suited to the production of a musical sound, in giving an oval, nearly round shape to the lips, is an *Italian A*, slightly darkened by slightly raising the root of the tongue against the soft palate, as in pronouncing the Italian words, *Anzi*, *Altro*, *Astro*, etc., or the English *Râther*, *Artful*, *Fâther*, etc.

On attacking the sound, the beginner must, therefore, open the mouth in a quite natural way, depressing the chin as if about to pro-

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nounce an Italian *A*, and holding it motionless in the same position as long as the production of the sound endures.

Here it is advisable to remind the pupil that the mouth can be opened only downward, the upper part being immovable, whence the necessity of pushing down the chin.

CHAPTER III

RESPIRATION

Inspiration and Expiration

THE normal breathing of a healthy human being is undoubtedly *diaphragmatic*. In this method of breathing, the abdomen is pushed down to make room for the large inferior extremity of the lungs, and the chest-walls are gradually dilated from below upward; but the shoulders do not move, whilst the lungs are filled up completely. We decidedly condemn the two other methods of breathing; namely, *lateral* and *clavicular*, both filling the lungs but partially, whence the necessity of breathing more frequently and the impossibility of singing long phrases in one breath.

Lateral breathing results from the sideways extension of the ribs, but the broad lower part of the lungs does not participate in it. However, in this method of breathing, the shoulders remain motionless. Clavicular breathing, raising the shoulders with the collar-bones, the shoulder-blades, and the upper part of the chest, is the worst of all, filling up only the smallest part (the cone-shaped point) of the lungs, in their upper extremity. Clavicular breathing gives the singer an unpleasing appearance, by the upward motion of the shoulders, as well as by its rapid repetition, in consequence of so-called *short breath*.

When explaining the physico-mechanical process of breathing to beginners, it is essential to make them understand that natural laws have provided for its independence of our will, as is observed in sleeping. Therefore, every intentional preparation or effort made in order to draw more air into the lungs will produce the contrary result, hindering the freedom of the natural process. If the scholar is clever and well-informed, the teacher may then explain to him that

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breathing may be considered from a chemical and from a mechanical point of view. Chemically considered, its object is to bring into our blood the oxygen indispensable to life, and to take away from it carbonic acid, which is a poison, as well as a superfluous caloric. The new venous blood is driven from the right lobe of the heart into the capillary vessels of the lungs (the extreme ramifications of the bronchial tubes), which are separated from the air-cells by a membrane so exceedingly thin that it does not prevent the blood's receiving from the air the oxygen which it requires in exchange for carbonic acid and superfluous caloric. The physico-mechanical working of the breathing is explained as follows :

The phenomenal weight of the atmosphere surrounding the terrestrial globe forces the air violently into every void. The lungs being perforated throughout by thousands of large and narrow tubes (the ramifications of the bronchial tubes already named), like a big sponge, they represent an empty receptacle. During inspiration, the air, rushing into them through the opening of the glottis and the windpipe, fills up the bronchial tubes, and even the smallest so-called capillaries. These extend across the whole interior periphery of the lungs. Once the lungs are full, the air is immediately driven out by its rarefaction (dilatation), as well as through the contraction of the muscles of the thorax, which have expanded during *inspiration*, and *expiration* takes place. As soon as the lungs are once more empty, fresh air enters again in the same way, and so on. In consequence of this wonderfully regulated natural process, the best manner of breathing is to let the work be done quietly and undisturbed by nature herself.

CHAPTER IV

PLACING THE VOICE

(*Pose de Voix—Impostatura della Voce—Ansetzen der Stimme*)

STROKE OF THE GLOTTIS

(*Coup de Glotte—Attacco della Voce—Ansatz*)

THE physiologico-mechanical action that produces the singing-voice depends upon the preparation of the glottis and the mouth in the same way as it naturally comes about in enunciation of any vowel in speaking. In Chapter II of this part we have already explained why an Italian *A*, slightly darkened, is to be preferred for the formation and the development of a vocal sound. But, first of all, we must make the pupil understand that the action of the glottis in setting the sound (the stroke of the glottis) is a normal, and not an *extraordinary, accidental function of the vocal organism*, which henceforth must be subordinate to his will, instead of being an unconscious act, as occurs in pronouncing the different vowels in speaking. Of course, the bringing together and the tightening of the edges (lips) of the glottis must not be exaggerated by extraordinary compulsion on attacking the sound in singing, but must be accomplished in a smooth way, as in speaking. The only difference in the action of the glottis between speaking and singing is to be explained as follows :

In speaking, the glottis acts by strokes, shutting and immediately reopening its lips (edges) in producing a vowel (or an undefined sound). In singing, once the glottis is shut, it must be kept in the same position as long as we wish to prolong the sound, according to the quantity of air we have stored in our lungs. Hence we may conclude that the purity, the unaltered continuity of the quality and

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duration of a sound in singing, depend exclusively upon the habit of keeping the glottis immovably closed, but without any effort whatever, during its emission. Regular practice will then gradually increase the volume of the voice by developing the elasticity and contractility of the vocal cords, and consequently the amplitude of the sonorous waves. Of course, during that period the coöperating laryngial muscles and the resonant vocal tube will also increase their aptitude for work.

This regular practice in vocal gymnastics, if carried on in a reasonable and gradual way, and without exaggeration, will in time undoubtedly develop the aptitude and strength of the vocal organ, exactly as happens when one exercises any other member of the body.

Third Part

CHAPTER I

THE HUMAN VOICE

THE sounds produced by a good normal voice, if not spoiled or altered through defective emission, represent, undoubtedly, one of the most glorious and æsthetically refined phenomena of creation. It is, therefore, worth while to endeavor to explain and restore to their real importance the principles from which this beautiful gift of nature originates, these principles having been entangled, and very often ignored, by the great majority of modern compilers writing on the subject. However, before entering upon analytical investigations into the production of the human voice and the origin of its most important modifications, namely, the classification of the different voices of both sexes (their respective character), we must try to examine summarily the physical laws that engender every sound, as well as every noise in nature.

The application of these elementary laws to our vocal organs will enable us, at the same time, to demonstrate in an irrefragable manner the existence of the different registers of the voice, resulting from identical natural causes.

In view of the abuse that modern laryngologists, physiologists, and teachers have made of anatomical engravings, illustrating some scientific parts of their works, I wish to avoid every theoretical example of the sort. I shall, therefore, endeavor to give a practical exposition of the matter, as clearly and comprehensibly as possible.

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Teachers and pupils seeking to acquire wider and deeper scientific ideas may turn to the numberless physical, anatomical, and physiological works bearing upon voice-culture (and more or less to be depended upon), which have been published in different countries and languages during the last fifty years.

CHAPTER II

SOUND AND NOISE

EVERY sound or noise results from the commotion of the atoms (globules) of the air which, once in motion, through condensation and rarefaction (concentration and dilatation) form sonorous waves.

The air can be put in motion by an artificial mechanism or by the natural commotion of the atmosphere. In both cases it can produce a sound or a noise only when, striking against a more or less elastic body, it sets it in vibration.

The rapid succession of isochronous beats of this vibrating body, cutting the air into a series of identically vibrating atoms of air, engenders the succession of uniform sonorous waves and produces a musical sound [tone].

Noise is, on the contrary, the result of an irregular succession of the beats of the vibrator, and consequently of unequal and unsteady sonorous waves.

The sonorous waves, however, do not traverse the whole distance from the spot where they arise to the ear which perceives the sound or the noise ; but, after performing their condensation and rarefaction, return to rest, having previously engendered new sonorous waves through their impulsion, and spread them in all directions.

This reproduction of the sonorous waves, which strikes our ear, lasts as long as the power propelling them continues to bring forth new waves. Their vibrating motion is gradually exhausted by the pressure of the surrounding atmosphere. Hence the gradual diminution in the intensity of the sound, according to the distance traversed by the reproductive motion ; as soon as the globules of the vibrating air which form the sonorous waves are dissolved, the sound or noise dies away.

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This fact shows that air is to sound or to noise what light is to the colors. Where there is no air, there is no sound ; where there is no light, there is no color. We may conclude from this that sound and noise, as well as colors, are the result of vibrations of, until now, unknown ethereal principles, inherent to *air* in the first case, and to *light* in the second. These various phenomena result from the peculiar physical structure of the different bodies producing them as sound or noise, or reflecting them as colors. We know the immediate causes of these wonders of nature, but the primitive motors are yet to be discovered. Nevertheless, it is evident that to produce different sounds or noises, as well as colors, *coactive* bodies are indispensable to air as well as to light. With regard to sound or noise, three factors are necessary to their production ; namely, the Motor, the Vibrator, and the Resonator. An exception to this general rule is the report of an explosive engine, when the noise is produced by the instantaneous vehement dilatation of the air (Motor), and not by the consecutive beatings of a Vibrator. The explosion of the air, in that case, generates all around an immense quantity of unequal and unsteady sonorous waves, which, meeting with an obstacle in the mass of the atmosphere itself as a Resonator, are reproduced and spread in all directions. The greater or lesser density of the atmosphere in which the explosion takes place, through the greater or lesser resistance it opposes to the sound-waves (the vibrating globules of air), engendered at that moment, gives more or less power to the detonation. Witness the result of the experiments made to determine the power of the report of a cannon fired on a mountain or in a valley. The density of the atmosphere in the valley gives immense power to the report, while on the mountain, where the air is rarefied, the noise is almost imperceptible. It must be considered that the sound-waves, in each case, do not travel in one direction only, but spread all around like the rays of the sun. We must, therefore, think of them in their propagation as hollow spheres, whereof the diameter increases as they proceed on their journey. If we throw a stone into a large receptacle full of still water, we get a correct idea of the motion impressed on the air by the report

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of an explosive engine. The sound-waves striking against a wall, a cliff, or other opposing surface, can return to their starting-point, provided the reflecting surface is at a right angle to a line drawn from the said point. If not, the sound-waves, when thrown back, take another direction, and may be heard at another point. Whenever two or more reflecting surfaces are inclined toward each other in such a way as to throw the reflection of the same sound to and fro, the sound is repeated over and over again—each time, of course, less loudly—until at last it dies away altogether. This is the phenomenon of the Echo and its repetitions.

Thus the real and unique Motor (generator) of a sound or of a noise is always the air. The Vibrator, which, according to its shape, length, width, and thickness, makes a larger or smaller number of beats in a given time, may be struck by a mechanical impulse or by a strong draught of air. The Resonator may be any opposing, more or less elastic, surface against which the sound-waves strike.

A successive reproduction of sonorous waves constitutes a heterogeneous element in the atmosphere. Compressed and extinguished on all sides, it silently traverses the air until it meets with an obstacle. This obstacle (an opposing surface of whatever form) against which it strikes, and which makes the sonorous waves vibrate by the shock, is the so-called Resonator. The fibres or globules of the Resonator of more or less elastic structure, being put in motion at that moment by the vibratory power of the sonorous waves, increase or lessen the motion received, and modify the sound, according to their special texture and elasticity.

CHAPTER III

THE HUMAN VOICE AND ITS REGISTERS

THE word Register is borrowed from the vocabulary of organ-building. In the invention of that grand instrument, it was intended to designate a series of homogeneous sounds, completely differing in their *timbre* (color) from the others produced by the same agency.

Having once stated that the production of a sound or of a noise depends upon the preëxistence of three principal factors, namely, the Motor, the Vibrator, and the Resonator, and since it is a matter of fact that these three factors are to be found in every wind, stringed, or percussive instrument, it is logical to infer also that they are present in the human vocal organ. Let us, then, endeavor to discover them in this living instrument. After experimental examinations we detect, in fact, that the *timbre* (color) of the sound produced by all instruments is of homogeneous nature throughout their whole compass, and that it never presents the sudden changes that we meet with in the human voice.

This phenomenon results from the fact that, in instruments, the three factors generating the sound are always unalterably the same throughout their compass. Consequently, we find only occasional alterations in the *elevation* or *intensity* of sound, the *timbre* remaining unchanged. Now, if we try to discover the same three factors in the human vocal instrument, we see that the organic Motor of the air (the lungs and the muscles connected with them) can develop more or less power and elasticity when we sing the ascending or the descending scale. But neither their physical conformation nor their physiological action is ever changed or modified when, on going beyond the limit of a register, the voice takes another color.

The Vibrator (the glottis) in its normal state is susceptible of in-

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numerable degrees of tension and contraction. It can also lengthen and shorten its orifice, and, in fact, there are two pairs of muscles, called the "ring-shield muscles" and the "shield-pyramid muscles," which, by stretching or slackening, pressing together or drawing back the vocal cords, govern the pitch of the sounds produced by their vibrations.

This process of altering the pitch of the sounds is also produced in connection with the shortening or lengthening of the resonance-tube, by raising or lowering the larynx. But, in all this, no modification can be detected in the physical structure or physiological activity of the glottis as a Vibrator that could account for the different *timbre* of the sound in a change of register.

If Motor and Vibrator have no influence whatever upon the modification of the tone-color, it is evident that its alteration, which is effected on passing from one register to the other, is to be ascribed exclusively to the coöperation of the different Resonators of the vocal instrument.

Resonance is caused when a sounding body communicates its vibrations to another body; or when, in other words, the second body is thrown into co-vibration with the first body.

The larynx being able to change its position, that is, to move up and down, as well as to incline forward and return, its upper part (called "shield [thyroid] cartilage") can alternately direct the tone-waves against the different resonance-chambers (walls).

Now, if what we call Register consists in a series of homogeneous sounds, which are essentially different in *timbre* from those of the succeeding higher or lower register, it follows that the vocal apparatus must contain as many distinct special resonance-chambers as there are registers. These various coöperative Resonators, built of different organic texture (hard or soft), impart, by reason of their physical properties, a characteristic, distinct color to each series of sounds contained within the limits of each register.

After protracted and careful experiments made upon my own vocal organ and upon hundreds of voices of either sex, I have reached

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the conclusion that there are altogether four different resonance-walls, and, consequently, four registers; *three* being employed by *female voices*, and the fourth belonging exclusively to male singers.

According to the traditional nomenclature, the three registers belonging to the female voice are called *Chest*, *Medium*, and *Head*, from lowest to highest. The Medium register of women, called *Medio* in Italian, and *Mittellage* in German, is in French incorrectly named *Fausset*, a term causing some confusion with the upper register of the male voice.

Male singers can also make use of three ascending registers, *Chest*, *Medium*, and *Head*, as do female singers; the only difference consisting in the compass of each register and in the different boundaries of the same, resulting from the individual conformation and position of the larynx, as I shall demonstrate afterwards.

But men can employ a fourth register (a fourth resonance-wall) called *Falsetto*, running parallel with their Head-register, by means of which they can alternately produce both *Head* and *Falsetto* sounds.

In tender and sentimental passages, or in *floriture*, tenors generally employ the Falsetto, which replaces the Head-tones of the female voice. Here we should note that the position of the larynx in a man being different from that of the organ in a woman, and his vocal cords being stronger, his Head-tones are unnatural and shrill, excepting after long exercise and practice.

Some high tenors, on going up to *B* or even *C* with the Medium, can also alternate with the Falsetto in the same region. Other tenors, not knowing how to produce the Falsetto, sing the high register with Head-tones, and this gives a disagreeable sound. The *timbre* of the tenor's Head-tones is as keen and crystalline as that of the chest-tones, in accordance with the similar physical texture of the bony (cartilaginous) resonance-walls.

On the other hand, Basses and Baritones of the ancient school used frequently to practise and employ the Head-tones in comic passages. I have often heard at the Italian Opera, in Paris and in London, Lablache, Tamburini, Giorgio Ronconi, Badiali, and others,

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sing the most difficult passages with Head-tones, imitating the sopranos in the delightful and nowadays, alas ! forgotten *buffo* and semi-serious operas of the Italian *répertoire*. This was the case, too, with the great French singers ; and the celebrated Faure of the Grand Opéra, now retired, and Fugère, now at the Opéra-Comique, can sing soprano music like the great prima donnas of the day.

The resonance-chamber of the Chest-register is the *hard palate*, and that of the Medium is the *soft palate*. The Medium sounds of female voices, however, must be leaned towards the *hard* palate to increase their sonority. Nearly all female singers, at the beginning, on going up to *C#* in the Medium, incline to go over to the *Head*-register. This must be absolutely avoided. The resonance-chamber of the Head-register is found, for both sexes, in the *frontal sinus* and the *turbinated bones*, against which the tone-waves strike, passing through the cavities of the nose.* These resonance-walls have, as base and co-vibrators, the hard and soft palates.

The respective sound-colors of these three Registers correspond exactly with the different organic texture and the physical conformation of the three respective resonance-walls. While the *Chest*- and *Head*-registers, having hard and bony (cartilaginous) resonators (the hard palate and the frontal sinus and turbinated bones), produce sharp sounds, the Medium's Resonator, being built of various muscles and cartilages, covered by mucous membrane like the other Resonators, emits smooth and soft sounds.

The Resonator of the Falsetto in the male voice is the *Pharynx*, formed of muscles and cartilages like the Medium's Resonator, against which the tone-waves strike ; whilst the *Uvula*, elevating and contracting itself, closes the way to the cavities of the nose. Consequently, the sounds of the Falsetto are as smooth and soft as those of the medium.

A man, by the same procedure, can produce the Head-tones exactly as a woman does ; but their *timbre* is too sharp, as already stated,

* [“ Resounding from (or against) the nasal cavities,” is probably the idea which the author intends to convey.]

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and consequently heterogeneous to the color of the Medium, while the Falsetto is more homogeneous to it.

Among thousands of Doctors and Teachers who have written in darkness about "voice-production," I have found some that absolutely denied the coëfficiency of the different resonance-chambers in the production of the distinct colors of the registers. They would be astonished if they had had the chance of hearing, as I heard during many years in Vienna, a man speak who had lost both hard and soft palates, which were replaced by a silver palate. He had, of course, lost at the same time the anterior and posterior pillars of the fauces, as well as the uvula, which are intended to concentrate the vibrating sonorous waves coming from the glottis. The poor man, possessing only the nasal cavities as a resonance-chamber, spoke with an absolutely nasal sound; but at the same time, being deprived of the directing concentric moderators of the sonorous ray, he was obliged to attack every vowel with excessive force, and throw the sound against the nasal cavities to make himself understood. He hacked the words, in consequence of the impossibility of articulating the *palatal* consonants, and was capable of pronouncing only the *labial* ones.

The vocal ligaments, and the resonators by the cavities above the glottis, represent the tuning-fork in voice-production. The increase of the sound depends upon the shape of the Resonator, which, in order to produce the best result, must be exactly tuned to the tone departing from the glottis. The coefficient Resonators (co-vibrators) are as follows: the vestibule of the larynx, the upper throat (pharynx), the hard and soft palates, and the frontal sinus, with the turbinated bones.

Omitting voices of exceptional character, like those of the *Castrati* (of sad memory); of the *Tenori-contraltini* (haute-contre), nowadays out of fashion everywhere but in England, where they are still used for the choruses of Händel's oratorios; and the *Contra-Bassi* (basse-contre), voices abundant in Russia, that can sing nearly an octave deeper than normal basses, let us speak of the *Six* voices whose existence is generally admitted; namely, Soprano, Mezzo-Soprano, Contralto, Tenor, Baritone, and Bass.

CHAPTER IV

CLASSIFICATION OF THE VOICES

A CAREFUL and accurate classification of the different male and female voices is the Alpha and Omega, the essential elementary foundation, of voice-culture and voice-preservation. Unfortunately, we meet nowadays with many composers who employ the human voice as a peculiar wind-instrument, according to the modern polyphonic system, only to increase the symphonic effects of the orchestra, through the combination of different *timbres* and dazzling sonorities, without according due attention to the peculiar character and range of each voice.

On the part of the teachers, as every one thinks himself, or herself, entitled to give singing-lessons, confusion in the classification of the voices has become general and most pernicious, and is undoubtedly one of the principal causes of the actual decline of the art of song.

We must, therefore, try to treat the subject with the most critical pedantry, endeavoring to cast some light upon it, and to straighten out to some extent the tangled skein of modern opinions on voice-culture.

I do not flatter myself that I shall be able to counteract at once the influence of the thousands of persons speculating upon the general ignorance on the matter, through their bold exposition of what they call new theories. It is with the feeling of a man accomplishing a sacred duty, and with the confidence inspired in me by the experience of nearly half a century, that I write this "Vademecum." May it produce some effect, however slight, upon conscientious teachers, and attract the attention of some superior capacities to the subject, thus helping to save the divine art of song from a fatal decline.

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In the classification of the different voices, it is first of all indispensable to recognize the peculiarity of each essential principle which may form an intrinsic characteristic of each individual voice. These essential principles are :

- (1) The Character.
- (2) The Compass.
- (3) The Timbre (sound-color).
- (4) The Quality.
- (5) The Volume.
- (6) The Intensity.

The Character

This is what is peculiar to one class of voice as compared with another ; what is characteristic in the different voices classed by categories as Soprano, Mezzo-Soprano, Contralto, Tenor, Baritone, and Bass.

The Compass

This is the number of ascending and descending degrees which a voice can traverse. Unfortunately, there are only general rules to determine this point, whilst innumerable exceptions exist. So the rule, that the compass of a voice corresponds to its character, may be called merely conventional. It depends absolutely upon the teacher, therefore, to avoid the mistake now so often made, of deciding as to the *character* of a voice by its *compass*. Nothing is so uncertain as this, especially for female voices. I have heard one of the greatest dramatic Soprani of late years, Sophie Cruvelli, singing passages going easily down to G natural below the lines, in Verdi's *Vêpres Siciliennes*, at the Grand Opéra in Paris. Her high register extended to D natural. Marietta Alboni, the greatest contralto that ever lived, possessed the following compass :

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During the first period of her brilliant career in Italy she sang "Son-nambula," "Norma," "Don Pasquale," "Anna Bolena," "La Figlia del Reggimento," "Elena" in *La Donna del Lago*, "Ninetta" in *La Gazza Ladra*, etc., all soprano parts. Later, when already celebrated, she sang contralto parts exclusively, and was the greatest "Arsace," "Pierotto" and "Orsino" ever heard.

The Timbre

Timbre is the special color of a sound, a different impression produced upon our ear by two sounds of the same *pitch* and *intensity*, proceeding from two different voices. It may be *agreeable*, *disagreeable*, *open*, *hollow*, *sympathetic*, or *antipathetic*, etc.

The Quality

Quality is a definite modification in the sound of a voice, which may be called *soft*, *rough*, *clear*, *covered*, *harsh*, *nasal*, *guttural*, *shrill*, *full*, *sweet*, *brilliant*, etc.

The Volume

This is the relative amplitude of the sonority of a voice ; that is to say, the amplitude of the sonorous waves it produces.

Intensity

Intensity is the degree of vigor, activity, and power of the isochronous vibrations of a voice, resulting from the degree of elasticity and strength of the vocal cords.

Some modern composers, as well as a great many professors of singing, now a days confound the *Compass* with the *Character* of the voice, and the *Character* with the *Timbre* or with the *Quality*.

But two voices of different *Character* may possess the same *Compass* ; and may be of the same *Character* and have a different *Compass*. They may also be alike in *Timbre* or *Quality*, and still be of different *Character*. Contrariwise, they may be of like *Character*, and differ in *Timbre* and *Quality*.

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Thus we find some different categories of voices, which, although having all the same Character, differ from each other in their Compass, their *Timbre*, or their Quality; whilst we meet with other voices of different Character, that are, nevertheless, similar as to Compass, *Timbre*, or Quality. Unfortunately, nearly all these important definitions, relating to the classification of the different male and female voices, that is to say, their Character, their *Timbre*, their Quality, and their Intensity, cannot be made plain by any graphic method, and only their respective normal Compass is to be noted.

We must, therefore, repeat that the accurate and definite settlement of the Character of a voice depends absolutely upon the knowledge, experience, and intelligence of the teacher, provided he or she is endowed with acute hearing.

In the following exposition of the different categories, I intend giving only the Compass of each, within the limits of its homogeneous and normal range, marking the boundary of each register as established by nature itself and sanctioned by long experience, and, further, confirmed by modern scientific investigation. Of course, every exceptional vocal organ is excluded from the following exposition.

CHAPTER V

GAMUT OF THE FEMALE VOICES

THE difference existing between the four female voices results from the larger or smaller dimensions of the parts constituting their respective vocal apparatus ; that is to say, from the different proportions of, respectively, the larynx, the vocal cords, and the corresponding resonance-tube. One of the principal factors contributing to their several individualities is the peculiar position of the larynx, which, on singing the scale, in addition to its movements up and down, can also bend

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itself backward in ascending and forward in descending [see Third Part, Chapter III], thus throwing the sonorous ray against the various resonance-chambers, in passing from one register to the other.

Soprano

The upper limit of the Chest-register of every Soprano voice varies between the following two notes :

F $\sharp$ is to be considered as a rare exception.

Owing to the great organic variety presented by nature between the different voices of the same Character, it rests with the capacity of the teacher to discover and determine the true limit of the Chest-register of each individual vocal organ.

Sopranos, who in the beginning of their studies experience some difficulty in singing E $\sharp$ with the Chest-voice, must never be urged to do so. By singing daily diatonic and chromatic elementary scales and exercises, the muscles that move the larynx gradually acquire greater elasticity, and the voice extends its compass.

In the beginning, with nearly all female voices, the lowest degrees of Medium tones are rather weak and not sufficiently sonorous. In order to facilitate their fusion with the Chest-register, pupils are obliged to study, darkening the last ascending Chest-tone and slackening it, in singing scales and exercises, upward as well as downward, so as to assimilate it in sonority and color to the first Medium tone. The lower Chest-tones are always to be sung clear, but without exaggeration. The darkened Chest-tones are to be obtained by lowering *halfway* the soft palate and the uvula against the root of the tongue, so that the tone-ray strikes only partially against the hard palate.

Every attempt to push the Chest-register beyond its possible natural boundary, irremediably prevents the development of the intensity of the first degrees of Medium, and consequently the blending of the two

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registers at the transition from one to the other. This is the general cause of what the French call "*un trou dans la voix*" (a hole in the voice).

In fact, whenever the limits of the registers are not clearly settled and connected, one always meets in the best voices a series of *undefinable*, weak, soundless, and false tones, either in vocalizing, or in singing some broad phrases with words.

With regard to pushing the registers beyond their natural boundaries, students must be warned against the fatal temptation to exceed the established limits, when, after having sung in public a couple of years, the elasticity of the muscles being increased, the larynx acquires a tendency to outrun them and facility to do so. At first, singers are extremely happy over this new conquest, and abuse it. But the consequences of the error are calamitous, and soon after, when the limits of the registers are displaced, the singers cannot master them any more, and the inevitable and irreparable "*holes in the voice*" appear.

Mezzo-Sopranos and Contraltos

Mezzo-Soprano and Contralto voices generally have a more intense, keen, and extensive Chest-register than the Sopranos, and it extends more or less toward the deep region of the scale.

According to the modern pitch, the highest Chest-tone of almost every Mezzo-Soprano's and Contralto's voice may vary between

F# is too sharp in nearly all such voices, and must invariably be avoided [as a Chest-tone]. The rule for uniting and blending the passage between the Chest and Medium registers by the Mezzo-Sopranos and Contraltos, is the same as that governing Sopranos. The upper limit of the middle register (Medium) in all female voices,

may vary between the following notes , but the

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general rule prescribes as the highest

Medium tone. The system of binding the Medium-and-Head registers of all female voices is the same as for the Chest-and-Medium registers, and, with the first degrees of the Head-tones, one must use the same precautions as with the first degrees of the Medium. Real Contraltos that can use the Head-register are very rare exceptions. Hence the aim can be only to develop the Medium register up to F $\sharp$, and very seldom to G $\sharp$.

The production and cultivation of the Head-register of female voices are, generally, more or less difficult, according to the peculiar organic dispositions of the individual voice. It requires scientific knowledge, practical skill, and long experience on the part of the teacher to develop it. In the beginning, the difference in *timbre* and sonority between the Medium and Head-tones is so distinctly marked, that many modern teachers, not knowing how to manage the case, do not hesitate to deny its existence, instead of admitting their ignorance. But the Head-register exists, and its disregard, compelling the singers to push the Medium register beyond its boundary, forces them to scream out the high tones, which they are unable to sing *piano*. At the same time, the voice becomes tremulous, and in a period of greater or less length it is lost altogether.

The Male Voices

The conformation of the larynx in children of both sexes is exactly the same. In fact, we hear boys and girls speak and sing with a voice of the same Character. The position of the larynx is perpendicular, midway in the throat, and both boys and girls can use only the Medium and Head-registers in speaking. At the period of puberty, however, generally between the ages of 13 and 16 years, a change takes place in the position of the larynx of both sexes; as it rises a few lines, more in the case of men than of women. But, while in boys the larynx at that time *bends forward*, in girls, although elevating its position, as

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already said, it remains in the same perpendicular position as before, excepting in the case of Contraltos, whose larynx takes nearly the same slanting position as it does in men. So we hear boys and Contraltos, during the period of mutation, speaking with *two* voices. Until the muscles are set in their new position, the larynx fluctuates between the old place and the new; throwing the sound-waves emanating from the glottis alternately against the hard or the soft palate, they speak in turn with Chest and Medium sound, and sometimes with a Head-tone, which produces the most comical effect.

After mutation boys, becoming men, regularly throw the sound against the hard palate, and speak with a manly voice, that is to say, with a Chest-voice; only in moments of pleasant or painful excitement do they casually direct the sound against the Medium or Head resonance-chambers.

There are, however, exceptional men whose larynx does not take the bending position at the time of change. These speak with Medium register all their lives, and their voices are called *effeminate*.

Girls, on becoming women, speak thenceforward with the Medium voice, bringing out, sometimes, Head-tones when joking or screaming.

In consequence of the alteration in the position of the larynx, which takes place on the change of registers, men, on beginning their studies, experience some difficulty in producing Medium tones and binding them to the Chest-tones. For, to do so, they are obliged to throw the larynx backward, to direct the sound against the soft palate, whilst women meet with the same difficulty in an opposite way; on passing from Medium to Chest-tones, they are obliged to bend the larynx forward, to throw the sound against the hard palate.

Gamut of the Male Voices

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Dramatic Tenor (Tenore serio).

Baritone.

Basso cantante (Basso giusto) (First Bass).

Basso profondo (Second Bass).

Exceptional Voices

Contraltino (Haute-contre).

Contrabasso (Basse-contre).

—The boundary of the Chest-register of a Lyric Tenor is

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On the following F♯ begins the Medium register, which in men the French call *voix-mixte*, the Italians *voce coperta*, the Germans *Gedecktes Register*, and the English *Covered register*. But E natural is to be considered as a transition-tone between two registers, that is to say, that, although during one's studies it must always be sung from the Chest, in scales and exercises, in songs it can be taken alternately with the Chest or with the Medium, according to the expression required by the dramatic situation, by the sentiment of the words, or by the emphasis of the musical phrase itself.

The Tenor's Falsetto is to be practised, developed, and used from

up to the last Medium tone. It may also be devel-

oped beyond this, if the special organic dispositions of the voice allow it. In every case it is indispensable that the Medium and Falsetto sounds alternate on the same scale, because a good singer must be able to execute the contrasts of *piano* and *forte* required by the different sentiments he has to express.

With regard to the boundaries of the Chest and Medium registers, dramatic tenors must follow exactly the same rules as established for lyric tenors. So, too, with the Falsetto, which, however, in this kind of voice, generally cannot be extended beyond the Medium's range.

The Baritone goes up with the Chest to . On

E♯ begins its Medium; but E♮ is to be considered as a transition-tone, and must be sung with the Chest (open) in the scales and exercises, and with the Medium (covered) in singing some phrases requiring soft expression. A Baritone can also easily develop the Falsetto by practising it, and may employ it if he wishes to sing *piano* the upper tones of his compass. E natural, although belonging to the Baritone Medium, and consequently to be sung *covered* in scales and exercises, as well as in pathetic phrases, may occasionally be sung with Chest [open] if required to express a strong and vigorous dramatic senti-

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ment. Of course, this can take place only when the pupil, having become a singer, is master of the mechanism of his vocal organ.

The Basso cantante, or Basso giusto, goes up to

with the Chest, like the Baritone, and must regulate the passage to the Medium in the same way. He can, however, never sing E with the Chest, because by reason of the peculiar quality of his voice, which is less soft than the Baritone's, E natural will always remain shrill, unæsthetic, and disagreeable, even if expressing vigorous sentiments. Nor can the Basso cantante think of producing a Falsetto, his larynx being unable to bend itself back so as to direct the sound against the larynx. He can only produce Head-tones, to do which he needs to bend the larynx halfway back, so as to direct the sound against the cavities of the nose.

The Basso profondo goes only to with the Chest. After singing a couple of years, the movements of the larynx becoming freer, he can reach E $\flat$ in the same register, if required by single dramatic phrases; but he must never sing it from the Chest in scales and exercises, D $\sharp$ always remaining the transition-tone between the Chest and Medium registers. The Medium register of the

Basso profondo can extend only up to ; very rare exceptions can reach F $\sharp$. Owing to the position of his larynx, the Basso profondo cannot think of singing Falsetto, but may develop his Head-register, like the Basso cantante.

The Contraltino, or Haute-contre, has no Chest-register. His Medium begins with his deepest tone, and goes up to .

In consequence of the smooth quality of his voice, the Contraltino can very easily sing Falsetto through the Medium range, and go very far

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beyond its limits. Such voices are particularly abundant in England, where they are employed in the choruses of Händel's oratorios, as already mentioned.

The Contrabasso (Basse-contre), owing to the low position of his larynx, goes up only to with the Chest, or quite exceptionally to C#, or D. Medium, Head- and Falsetto registers are quite unattainable for him, in consequence of the low position of his larynx. These deep Bass voices, so frequently met with in Russia, are of great value, especially for Church Choruses or popular Russian Choruses.

ERRATUM.

On page 42 opposite, line 11, the first word should be *pharynx*, not *larynx*.

Fourth Part

CHAPTER I

HOW TO PRACTISE

It is a physiological axiom, that rational and well-graduated gymnastics develop great elasticity in the muscles of any member or organ of the human body, and consequently impart great powers of resistance and endurance ; whilst excess in practising, without elementary and progressive order, produces fatigue and exhaustion. In conformity with this sound principle, it is strictly necessary that the training of the organs of phonation be carried on in the same gradual way.

Accordingly, the pupils, on beginning their vocal studies, must not sing too much, and during the first weeks they should not practise more than ten or fifteen minutes at a time. Such a regular period of practice may be repeated three or four times a day, but each period must be separated from its successor by a long interval. The time so given to training the voice may then be gradually prolonged, after a few weeks, until half an hour each time is given.

If the pupil, disregarding these directions (as is often the case), works at home more than his teacher has advised, the sad consequence, fatigue of the voice, relaxation of the vocal cords, and occasionally absolute aphony, will speedily follow. The consequence will be, long interruption of studies and great loss of time.

New pupils cannot, at first, clearly understand all the explanations given by the teacher concerning the respiration, the placing of the voice, the definition of the registers, etc. It is therefore advisable that, during a few weeks, the teacher make a new pupil sing ten or fifteen minutes every day under his guidance, forbidding him or her, however, to study alone at home.

CHAPTER II

ANALYSIS

STUDENTS that wish to learn singing, especially women, are usually not musical. They therefore begin to sing elementary exercises and scales for placing and developing the voice, quite mechanically, guided only by their ear and without paying any attention to the rhythmical divisions and subdivisions of every measure or musical figure. Consequently, they fail to grasp the real time-value of every single note.

This way of singing exclusively by ear is not only useless for the purpose in hand, but makes the pupil waste invaluable time. Besides, as he always sings with hesitation when he vocalizes, the pupil is obliged to repeat the same passage a hundred times to catch the time-division and intonation, so that instead of promoting his vocal development, he only wears out his voice. Therefore, the student, if not musically prepared, must begin from the very first lesson to form the habit of analyzing, that is, of considering at first what he is going to sing. In a word, he must always let mental work precede the physical exertion.

Students adopting this analytical system at the start, will find it of great utility in going through the different progressive periods of their tasks. It will also be extremely useful to them in later days, when, advancing in their public career, they have to learn new songs or parts, or in any works they have to interpret.

CHAPTER III

STYLE

EXCEPT national songs, which represent popular local style, being an outgrowth from the social, physical, and moral conditions of each country, as well as from its peculiar language, musical compositions belonging to a higher style, the masterpieces of all nations, are highly appreciated everywhere. In the same line, excepting special local singers of national songs, we see celebrated vocal artists of different nationalities meet with the same enthusiastic reception in Paris, London, Rome, St. Petersburg, New York, Madrid, etc. It is, therefore, wholly erroneous to argue that there is a peculiar Italian, French, German, or English æsthetic music-style; and it is absurd to speak of a special Italian, French, German, or English "method" of singing. There is only a single æsthetic style in music throughout the civilized world, as well as a single singing-"method," and that is the *good one*, in the pure and elevated artistic conception of the term. Painting and music have great analogy in their expression and effects. In painting, the expression consists in the correct reproduction of the natural forms and colors, and the effects result from light and shade and from infinite gradations and contrasts of color. In music, expression consists in the awakening of natural feelings which it is presumed to depict; and the effects result from *piano* and *forte*, and from rhythmical movement, with all its infinite gradations and contrasts.

The evolution and decline in painting were the same all over Europe during the middle ages; and modern music exhibits exactly, everywhere, the same period of realism, exaggeration, and confusion that preceded the decay of painting in the early part of the eighteenth century.

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Ascending, descending, and beginning anew the eternal scheme of creation and destruction, under the deceitful semblance of new forms : such is the lot of human intelligence ! We may say, that what we call progress, is nothing but a new combination of already existing imperfections.

The process of decline is invariably the same in every branch of human culture, and results from the generalization and vulgarization of every art or science that opens a path to the ordinary intelligence. Whilst Genius unconsciously acts synthetically, Talent proceeds consciously on an analytic system. And so, what Genius creates by inspiration, Talent destroys by meditation.

As soon as a Genius, on appearing, commands the attention of public opinion, Mediocrity begins to analyze his great works, imagining that it will attain the same ends through system, which it fancies it detects in them ! But Genius has no system, and by producing something new, it effects a revelation, moved by supernatural divination and spontaneous inspiration. Afterwards, Mediocrity, under the illusion or pretext of following Genius's path, invents new processes which become accredited and adopted. Public taste rebels against the degrading innovations in the beginning, but by and by becomes indifferent, and, later, unconsciously accustomed to them ; at last, in quest of new emotions, it accepts them as modern products of progress.

This begins the decline !

But, after reaching the possible limits of vulgar transformation, the human spirit, having exhausted all material and technical combinations, begins to look back again to the point of departure, and reaction sets in. Forward or backward, there is a boundary from which humanity is compelled to begin once more from the beginning.

The present period of music and singing is that of their generalization and vulgarization, and, hence, of their decline.

The so-called Symbolic modern music replaces æsthetic and true inspiration with its entangled, vague, and obscure realistic and theoretic phraseology. In the art of song, empiricism is substituted for the old

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fundamental physiological and æsthetic principles and rules, as well as for the best traditions. Both arts are the expression of the sentiment of material progress and moral retrogression, which invades our present generation.

In fact, speaking especially of song, we see a great many professors of singing who, wishing to make their way according to their capacity and knowledge, assert that, as modern vocal music is founded on broad and declamatory phrases excluding every passage of agility or fine vocalization, singers are no longer obliged to perfect the mechanism of the voice; this, in their opinion, exhausting the vocal organ and compelling the student to waste precious time.

As regards fatigue of the voice caused by work [we have already alluded to this in Part IV, Chapter I], it depends partly on the teacher, and partly on the intuition and intelligent docility of the scholar, to avoid it. As to the technical exigencies of modern broad and declamatory musical phraseology, this is quite the reverse of what many teachers assert.

A singer who has learned to breathe properly, has equalized his voice and made its registers even, having rationally developed the elasticity of his larynx, and the elasticity of his vocal cords and resonance-tube, in order to produce every different gradation in coloring the sound, and give it all possible alternating degrees of intensity and expression,—such a singer can assuredly sing modern music without incurring any fatigue or making undue effort, that is to say, without employing exaggeration and resorting to shrieks, instead of expressing natural feelings and emitting æsthetic sounds. Another singer, continually struggling with his breath, as well as with his vocal technique, and consequently compelled to breathe at every bar, and exaggerate expression to force out the sounds, distorts modern musical phrases, screaming instead of singing, wearing out his voice in a very short time, and never doing justice to the composer's intentions.

If singers would start on their public career properly equipped for the physical part of their work, no voice could be ruined in a few years, as is now the case. Singing cannot be learned exclusively by

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imitation, any more than can painting by copying the works of the masters of art.

Every fine art contains two parts : the *technico-mechanical*, and the *æsthetic*. He that has not sufficiently prepared himself for overcoming the difficulties of the *first* part, can *never* reach perfection in the *second*, even if born a Genius !