

The McDowell Series of
Plastic Surgery Indexes
Volume I

THE ZEIS INDEX
AND HISTORY OF
PLASTIC SURGERY
900 B.C. to 1863 A.D.

Compiled by Edward Zeis, M.D.
Translated, with additions, by
T.J.S. Patterson, M. Chir., F.R.C.S.

THE McDOWELL SERIES OF PLASTIC SURGICAL INDEXES

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VOLUME I

THE ZEIS INDEX AND HISTORY
OF PLASTIC SURGERY
900 B.C.—1863 A.D.

Translated, with Additions and Revisions,

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From

DIE LITERATUR UND GESCHICHTE DER PLASTISCHEN
CHIRURGIE

Von Dr. Eduard Zeis. Engelmann, Leipzig, 1863-64



The Williams and Wilkins Co./Baltimore

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DEDICATION

This volume is dedicated to the memory of Dr. Robert H. Ivy (1881-1974). It would be difficult to imagine a more scholarly, friendly, or humble gentleman. One of Dr. Ivy's great loves was the complete and accurate bibliographical documentation of plastic surgical procedures. As Editor of the journal *Plastic and Reconstructive Surgery* from 1946 until 1965, and then as Consultant to the Editor until 1974, he personally and painstakingly typed the index for every volume from Volume 1 through Volume 48 (1971). The publication of this Zeis Index was one of his fondest hopes.

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VON
DR. EDUARD ZEIS.

LEIPZIG,
VERLAG VON WILHELM ENGELMANN.
1863.

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Boston, Mass.)



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D. Zeis.

*Für den Besten der Dresdener Kinderheilanstalt
herausgegeben von seinen Freunden.*

EDUARD ZEIS (1807–1868)

(Reproduced by kind permission of the Department of Prints and Drawings of the
Zentralbibliothek in Zurich, Switzerland.)

The signature is lithographed, and the “D” is probably an abbreviation for “Doctor.”
The portrait is dated “c. 1842.”

EDITOR'S FOREWORD

This is the first volume of five, which will comprise a total index of the plastic surgical literature of the world from the beginning of time until now.

The possibility of compiling and publishing such an enormously useful reference work occurred to me while we were assembling the 25-Year Index of *Plastic and Reconstructive Surgery* in 1970. After consulting with leaders at two of our national meetings, I became convinced of the feasibility and extreme desirability of doing this. Therefore, in the June 1971 issue of the *Journal* an editorial note was inserted (Vol. 46, p. 556) to introduce the subject and to seek help.

Response to the note was immediate, and from several sources. We were gratified beyond all anticipation when the eminent surgeon and renowned scholar, T.J.S. Patterson, volunteered to do Volume I, based on the Zeis classic. As it turned out, the task was a monumental one. Not only did he have to translate every word of Zeis' from mid-19th century German into English, but he also had to translate many entries and quotations from Latin, Greek, French, Italian, or Spanish into English. Next, he had to reorganize the work. Zeis had published his original "history" with an annotated index in the front and a discursive commentary in the back; then one year later he brought out a supplement containing corrections and additions to both the index and the commentary-history. Mr. Patterson has skillfully collated these, with elimination of duplications and clarification of the obscure. In the doing, he found it necessary to research many items in depth and breadth, using the superb resources of the great Bodleian Library at Oxford University. A number of additional references were found, and he has added these—together with his comments. In short, we now have in this Zeis-Patterson Annotated Index *the definitive work* in this area, one which will remain so as long as our civilization persists.

Volume III of the Master Index Series covers the period from 1921 to 1946 and has been compiled by Dr. Christopher Leuz. It is in press and should appear early in 1977. Volume IV, "The Ivy Index," covers the 25-year period from 1946 to 1971; it was published in 1971 and copies are still available from the Williams & Wilkins Company. Volume V, covering the 5-year period from 1971 to 1976, has been compiled; it is in press and will appear in 1977. Mr. Patterson has just begun work on Volume II, which will cover the period from 1864 to 1920; we plan to publish it early in 1978. When complete, the five volumes will comprise a matching set which will likely be the most useful (and most used) item on the top of every plastic surgeon's desk.

From the beginning, the Master Index Series has been sponsored by the Educational Foundation of the American Society of Plastic and Reconstructive Surgeons. In 1971 the Foundation appropriated funds to help provide secretarial assistance to Mr. Patterson for Volume I; this was done by the Board of Directors when Dr. D. Ralph Millard was president. In 1975 the Marketing Committee of the Foundation, chaired by Dr. Ruedi Gingrass, did an exemplary and practical survey of the demand for a reference work of this sort. The result was so decisive that the Foundation immediately took steps to assure publication of the entire series.

The present volume, spanning most of recorded history and having been put together from many languages and several alphabets, has been extraordinarily difficult to produce. It would never have been published without the expert cooperation and help from Dick M. Hoover, Robert C. Och, and others from The Williams & Wilkins Co.—or without the skills and unflagging application of them for long hours by members of our Honolulu editorial office, notably Kitty Dabney, Mary McDowell, and Barbara Kramer.

As plastic surgeons, we probably have the richest heritage of any medical or surgical specialty. Perhaps it is only fitting that we should be the first specialty to have available a master key to all the research that has ever been done, and all the knowledge that has been accumulated, in our field.

Frank McDowell, M.D., Sc.D.

Honolulu, Hawaii

TRANSLATOR'S PREFACE

*"The business of a Translator is to convey, with faithfulness, the ideas of his author . . . I shall esteem myself happy, if this translation, when in the hands of the learned, shall be found erroneous in such points only as do not materially affect the sentiments of its author. A merit beyond this I neither plead nor attempt . . . and I would wish to engage the candour of my reader, by reminding him that it was usefulness alone which I had regard to in the execution of the work. And I would have him, at the same time, be inform'd, that when I first was desir'd to engage in it, I did it with a view of instructing myself, as well as others."*¹

My attention was first drawn to Eduard Zeis of Dresden (1807–1868) by Dr. Frank McDowell, who pointed out the importance of his work to any study of the history of plastic surgery. All his writing was in German and, as far as I know, none of it has previously been translated into English.

Zeis was a passionate supporter of plastic surgery at a time when the foundations of the modern specialty were being laid, in the first half of the 19th century. He was active, both as surgeon and historian, during the greater part of this period. As a practicing surgeon he was in a position to evaluate all the operative techniques known at that time. In 1838, he published the first comprehensive textbook on the subject (No. 677),² in which he introduced the term "plastic surgery" (*plastische Chirurgie*)—one which he himself had devised. As a historian he studied the literature relating to plastic surgery from the earliest times, collecting everything that he could find for his own library. In 1863–64, he published the combined history and bibliography (Nos. 684, 685), which is the basis of this volume.

I had set out to make a rough translation for my own benefit, but Dr. McDowell suggested that a definitive translation with annotations might serve as the first of the five volumes that he has planned for a complete bibliography of plastic surgery. When the translation was finished, it became clear that Zeis' text was incomplete in a number of important respects—so fairly extensive revisions and additions were required to make it of maximum usefulness to present-day readers. These are described in the section entitled "Notes on this translation and its revisions and additions," which the reader must consult to understand the layout of this volume.

Preparing this bibliography has been an enjoyable and instructive exercise. If it should prove to be of interest to others, I would like to think that this work is a tribute to my father—S. W. Patterson, M.D., F.R.C.P. (1882–1960)—who brought me up in the belief that a working knowledge of the German language is an essential part of the education of a doctor.

Finally, we should all pay tribute to the memory of Eduard Zeis himself, who worked so diligently throughout a busy surgical lifetime to provide the literary

¹ From the translator's preface to "The seats and causes of diseases," translated from the Latin of John Baptist Morgagni by Benjamin Alexander, M.D., London, 1769.

² These numbers refer to individual items in the bibliography. This follows Zeis' original layout, in that the subject matter has been arranged in chapters, but our reference numbers to the individual items are consecutive throughout the whole book.

foundation which he regarded as essential for the continuing development of plastic surgery.

For all errors and omissions in this present bibliography I would say, as Zeis said in 1863: "In this sort of work it is impossible to say that it is now finished, that nothing has been overlooked, and that it is now ready for publication."

T. J. S. Patterson

Oxford, England

1971-1975

BIOGRAPHY OF EDUARD ZEIS, M.D.

His Life

Eduard Zeis, who was born in Dresden on October 1, 1807, started his medical studies in Leipzig in 1827, moved to Bonn in 1829 to be under Phil. v. Walther, and then went with him to Munich. v. Walther appointed Zeis his assistant and thus became one of the important influences in his life.

In 1830 Zeis returned to Leipzig to be assistant to the famous surgeon, Kohlrusch. There he completed his medical studies by graduating on June 22, 1832 with a dissertation on "*Herniae cruralis externae historia cum epicrisi.*" He then went to Dresden where he engaged mostly in surgical practice, with a particular interest in diseases of the eye and diseases of children. In Dresden he joined three other doctors in founding the Children's Hospital. At this time he was supported by von Ammon and Hedenus, and his association with the former led him to an investigation of the glands in the eyelids. Zeis also played a major part in founding the Medical Association of Dresden.

In 1844 he was invited to Marburg as Professor of Surgery and Director of the Surgical Clinic. There he soon became involved in petty provincial academic politics—and as an outsider he was subjected to hostile attacks by locally entrenched dignitaries. His nature was not one that would allow him to compromise with those whom he came to regard as his enemies, and this whole period seems to have been one of struggles and disappointments.

Zeis was happy to be recalled to Dresden in 1850 as Director of the Surgical Department of the newly opened City Hospital. During his 18 years there, he became widely known for his tireless zeal on behalf of his thousands of patients. He took up microscopy, and carried out a special study of the frequent occurrence of "blue pus." These investigations had to be abandoned in March 1868, because of increasing failure in his vision—which made him very depressed for fear that he would become blind and therefore useless and unable to work.

At the beginning of June he undertook an operation for hernia, but this was followed by pneumonia—and he died in Dresden on June 28, 1868. He was unmarried.

His Part in the Development of Plastic Surgery in the First Half of the Nineteenth Century.

Up to the beginning of the 19th century plastic surgery was not an accepted or regular part of surgical practice. The Indian techniques were unknown in Europe. The skills of the Sicilian and Italian schools of the 15th and 16th centuries had been, for the most part, forgotten, or recalled in ribald and contemptuous terms. Tagliacozzi's detailed descriptions of his reconstructions of noses, lips, and ears were not read in the original. His distinction between (in modern terms) autografts and allografts was not appreciated; the literature was full of fanciful stories of miraculous cures, which brought him and this work into disrepute—and even earlier had caused men of powerful influence, like Paré and Fallopius, to condemn the whole subject. During the 17th and 18th centuries, isolated examples of reconstructive surgery were

noted with amazement and the descriptions were copied uncritically from author to author—more as medical curiosities than with any thought that they might have general applications.

The first news of the Indian method of rhinoplasty reached Europe in 1794, where the later demonstration of its practicality by Carpie and Graefe caused widespread interest among the surgical masters of the first half of the 19th century. This was the era of “flap” surgery; free grafts were rarely discussed (except in the context of the reunion of parts which had been accidentally completely separated). Great ingenuity was devoted to exploring the new and exciting possibilities although, as yet, the only material used for reconstruction was skin.

Zeis was a practicing general surgeon during this period. He took a particular interest in plastic surgery, however, and its history—and he personally tried out and evaluated all the plastic and reconstructive techniques known at that time. He does not seem to have made any major operative contributions, although he records a number of useful modifications of existing operations (particularly of Dieffenbach’s method of cheiloplasty). His ophthalmic interest was shown by his description of the sebaceous glands in the eyelids, which are still sometimes referred to as the “glands of Zeis.”

His chief claim to fame lies in his writings. His special interest always was to collect material relating to plastic surgical operations and their history. Then he set himself the task of compiling the first complete bibliography and history of this new specialty.

His Writings

Zeis was a prolific writer who published a large number of papers on different surgical subjects: cheiloplasty, the art of assisting at operations, operations on joints (particularly the hip), examples of bony disease in prehistoric animals, fractures of the ulnar coronoid with dislocation of the upper end of the radius, intracapsular fracture of the neck of the femur, congenital fusion of the labia, ingrowing toenail, hospital gangrene, and the effect of prolonged local baths on various conditions, including burns. He also wrote many reviews and critical comments in various journals.

He was best known, however, for his writings on plastic surgery. His most important works were the *Handbuch der plastischen Chirurgie* (Berlin, 1838) (No. 677)—the first comprehensive textbook on the subject—and *Die Literatur und Geschichte der plastischen Chirurgie*, Leipzig, 1863; *Nachträge dazu* (Supplement), *ibid.*, 1864 (Nos. 684, 685)—in which he attempted to collate all the references in this field known up to that time.

He also made a special study of the passages in Celsus relating to reconstructive operations.

Although he had started to collect material relating to plastic surgical operations and their history at the beginning of his surgical career, it was not until 1838 that his textbook was published. Several years before this, von Ammon had urged him to write a book, but he had found it too difficult. Then Blandin’s book (*Autoplastie*, Paris, 1836) was translated into German in 1838, and Zeis reviewed it. He found it to be very superficial, and to give the impression that plastic surgery had been invented by the French. This spurred

him to write a book which would not only give a complete picture of this branch of surgery, but which would bring together its scattered and growing literature, and give Germany the honor due her for its revival and development. His hero, Dieffenbach, promised his support and sent him parts of his latest and unpublished techniques which were due to appear in the forthcoming fifth volume of his *chirurgische Erfahrungen*.

Zeis' *Handbuch* was published in Berlin in 1838, with an encouraging foreword by Dieffenbach, in which the latter said: "May this book go down to posterity like that of Caspar Taliacotius!" When it was reviewed in London in 1839 (British and Foreign Medical Review, vii, 386), the reviewer could only remember four authors having written about this rapidly developing specialty: Zeis, Blandin, Dieffenbach and Liston. As the last two dealt only briefly with the subject, the reviewer gave most of his attention to the first two, who had attempted to cover the whole field. In spite of some criticisms, Zeis' manual was shown to be far superior to Blandin's book in all respects, and thus could be regarded as the first comprehensive textbook of plastic surgery. Zeis set out his aims in the preface:

As I know that many surgeons, who have never had the opportunity of seeing plastic operations carried out, are not yet convinced of their value, my endeavors have been directed mainly toward a truthful demonstration of what plastic surgery can do, in order to show the unbelievers; but without exaggerating and without making promises which might raise hopes which plastic surgery cannot fulfill. Only he who is himself convinced can convince others; it is thus my hope that I may succeed in persuading those surgeons, who up to now have had little faith in plastic surgery, to give it a trial.

The book has 576 pages and contains many case histories, as he was a firm believer in their value as compared with impersonal descriptions of operations. He used wood-cuts of simple design, so that they could be inserted at the appropriate places in the text and thereby "better understood than neatly folded copper-plates, which no one can be bothered to open." However, he did add two large copper-plates of a forehead rhinoplasty at the end of the book, to convince those who had never seen a transplantation. He thanked his publishers for allowing him so many illustrations, as he was afraid they might raise the price of the book.

At the time Zeis wrote his *Handbuch* he had already collected a large bibliography, extending back over many centuries, and this formed the first section of his 1838 book. While working on this, he found many errors in the quotations from the earlier literature—as one author copied from another without checking the original source. Sometimes the title seemed to suggest more than the text actually stated; this occurred particularly with the "reunion of completely separated parts of the body," in which, in contradiction to the title, the text often showed that separation had not been complete. He set himself the task of correcting these by collating the original texts; and with prodigious industry he attempted to cover the whole of the literature himself.

As he said: "In the last century it was possible to make complete collections, such as those by Haller and Vigiliis von Creutzenfeld, of the titles of all the articles which had appeared up to that time in the various writings of individual surgeons. Later Pfeiffer carried out the same task in his 'Universal repertorium.' Since then, however, the flood

of new work in the medical journals has made it more and more difficult to prepare and publish such collections. I then thought that many colleagues might wish to have at least as complete a catalogue as possible of the published material of a definitive branch of surgery, such as plastic surgery, whose literature could be fully encompassed. I have, therefore, covered the literature, not only the individual volumes but also the articles in journals, often apparently unimportant, but which serve to show how the Taliacotian art was still talked about at a time when it was no longer being practiced."

For the sake of completeness he recorded every possible reference, and also what he called "negative" references (*i.e.* those which other authors had wrongly alleged to contain material relevant to plastic surgery). He included the sections on plastic surgery which had been published in textbooks, although he admitted that this might be superfluous (as anybody could look up the index of these for himself and find how much plastic surgery they contained).

In this way he hoped to provide an authoritative catalogue, which no one had ever done before, and which would provide the correct versions of the references for all time. Every reference which he had studied himself was marked with an asterisk.

He was then advised by the famous historian, Choulant, to add a brief note to each title and to publish the whole up-to-date bibliography as a separate volume. This was the origin of his greatest work—*Die Literatur und Geschichte der plastischen Chirurgie* (1863–4).¹ Here his notes were often copious, and the value of the whole was greatly increased by his inclusion of important passages from the original text—often reproducing long sections word-for-word.

Zeis' self-imposed task of examining all the relevant literature himself led him into many difficulties and disappointments. Many of the available references were incomplete. The French journals were particularly troublesome as they often printed the same article in several different journals—either word-for-word or with various minor alterations. Some of the more recent references were trivial, but as he found it quite difficult to start making a selection, he included everything that he found.

Finally he managed to collect nearly all the main separate works on plastic surgery, expending a great deal of his modest income to do so. But this was still not enough for his purpose. So he consulted libraries up and down the country, and traveled widely—as far as his medical duties would allow—to hunt for difficult items, especially in private collections. Without financial reward he made a complete catalogue of the Royal Library in Dresden. In addition, he carried on correspondence with librarians in many places, begging them to send him books and journals. The list of such people to whom he wished to express his gratitude occupies a whole page of his book, and he ruefully admits how much trouble he must have given them.

In spite of these extreme efforts, there still remained a number of gaps that he would have liked to fill, but his professional duties prevented him from spending more time traveling from library to library. Another problem was to get hold of some of the foreign journals—particularly French and English—so that he sometimes had to rely on a simple record of the title without being able

¹ A facsimile of this was published in 1963 by Arnaldo Forni Editore of Bologna.

to study the original and make a summary as he would have liked. When finished he was still aware that his vast collection might well be shown to be incomplete, but he comforted himself with the thought that at least he had collected and sorted the older literature as no one had ever done before.

His Introduction of the Term "Plastic Surgery"

In 1838 the terminology of this branch of surgery had not been standardized. Although Zeis was always meticulous in defining his terms, a wide variety of names was being used by other authors—both for the main subject and for the various stages of transplantation. In his *Handbuch* Zeis gave a full description of the nomenclature at different periods in the evolution of surgery, from the *chirurgia curtorum* of the 16th century—with Tagliacozzi's addition of *per insitionem* (by grafting)—to the spate of new terms in several languages which resulted from the revival of interest after 1794.

Graefe seems to have been the first to coin the term "rhinoplastik," from which many others were derived—e.g. *chiloplastik* (*sic*), *blepharoplastik*, etc. However, the name for the whole specialty was more difficult: "organoplastik," "morioplastik," "neoplastice," "anaplastice," "restitutio organica," "ente animale" and many others had been suggested. Langenbeck favored "organische Plastik," as implying the use of living tissue (as opposed to prosthetic or "cosmetic" procedures, where artificial parts were supplied). The French, particularly Blandin, tried to popularize the term "autoplastie," which had been introduced by Labat. Zeis was strict in his condemnation of this last term, pointing out that it implied either an innate power of reproduction or, because the graft was taken from the patient himself, that the opposite (*i.e.* heteroplasty) was a practical proposition.

Having discussed all these possibilities, Zeis chose *plastische Chirurgie*. He accepted the objection that it was probably impossible to find one word which would cover the whole subject, but he believed that this term was the most comprehensive one and would be the most easily understood by everybody.

His Definition of Plastic Surgery

Having decided on the name, Zeis tried to define the boundaries of this new specialty—although at times he found it difficult to decide whether any particular procedure belonged to plastic surgery or not. His definition of *plastic surgery* was: "That part of operative surgery which is concerned with the living replacement of missing parts." (At the time he wrote this, the only material available for such replacement was skin; this was, therefore, implied in his definition.) As a rider to this, he stated that a procedure could only be regarded as a true "plastic" operation when something was done to make the skin more mobile than before. This led him to exclude the simple closure of a hare-lip and of a cleft in the soft palate, unless some additional maneuver was necessary; similarly he excluded the flaps of amputation stumps and cases where, after excision of a tumor, some of the skin was retained to cover the wound.

The possibility of replacing missing parts depended upon the size and the organization of the particular part. Plastic surgery could replace noses, lips, cheeks, eyelids, and various other parts, but not arms or legs. (Here artificial

means were available, but these were not part of plastic surgery.) In general, the transplantation of skin was the characteristic sign of a plastic operation, but there might still be truly plastic procedures without this—where the skin was simply drawn together or turned over. Under the latter he included a number of operations which were unknown in the old *chirurgia curtorum*, but which were developed from the experience gained during the transfer of tissue for reconstructing parts of the face—in particular, operations to close fistulae in various parts of the body, especially in the genito-urinary organs.

Zeis realized that too close adherence to his definition would lead to difficulties; disarmingly, he noted that he would certainly be accused of inconsistencies, but that he must be allowed to use his judgment of what to select. For example, he would be the first to agree that the division of tendons did not form part of plastic surgery, for “the formation of connective tissue between the cut ends is simply the work of Nature and not, as in transplantation, a work of Art,” but he included this in his textbook because he thought that the reader would be pleased to learn the up-to-date treatment.

His Four Main Principles of Transplantation

Zeis was continually on his guard against surgeons who tried to make extravagant claims for some relatively minor procedure, which they then sought to dignify by the name of plastic surgery. He was careful to distinguish between the general principles of transplantation and the minor modifications which had been introduced on the spur of the moment to help in some individual case. He felt that a surgeon was not entitled to have his name attached to such a minor procedure, unless some new principle appeared which could be tested further by being applied to other similar cases.

On this basis, he recognized four main principles, which he called “*Operationmethoden*.”

1. *Italian*. The transplantation of a piece of skin from a distant part of the body, which retains a broad attachment to its place of origin for some time, and whose complete separation is not undertaken until it is certain that it will be completely nourished from the recipient site.

2. *Indian*. A skin flap taken from the immediate neighborhood of the defect, with a relatively narrow pedicle which allows it to be twisted and still maintain its nutrition.

3. *Celsian*. This consists simply of stretching and advancing a piece of skin which has been undermined to a greater or lesser extent. (Zeis noted that, from its antiquity, this method should have been put before the *Italian*, to which it is, however, much inferior in what it can achieve.)

4. *Seitliche Verschiebung* (lit. “lateral shifting”). This is the principle of the transposition flap, discovered undoubtedly (according to Zeis) by Dieffenbach—although the French referred to it as the “*méthode française*,” and held it to be equivalent to the *Celsian* method. As the latter is clearly an advancement flap, Zeis correctly showed that they were in error; he said that, indeed, they “seemed to have no proper understanding of the matter at all.”

All operations for the transplantation of skin were carried out on one or another of these principles, or a variant of them; no others could be accepted as “*Operationmethoden*.”

His Contributions to the History of Plastic Surgery

While compiling his bibliography, Zeis made a number of original observations on the history of the specialty. In order to make it easier for the reader to

find the results of these researches, he carefully listed them in the preface (1863).

1. The 9th chapter of the 7th book of Celsus used to be quite incomprehensible, and to many (particularly the French) it remained so. Twenty years before, Zeis had given a complete explanation (Nos. 670, 681), and now he would simply give a summary of what he had said then (p. 1).

2. Up to that time the knowledge of Branca and his son Antonius was based on information from Elysius Calentius, Vincenz Auria, and Gourmelenus. Zeis made use of a much more important source—Facius, a contemporary of the Brancas (see also Malgaigne No. 136—introduction to his edition of Paré p. C). Facius showed that Branca senior made noses from the skin of the face—and that it was his son, Antonius, who first used the arm, not only for noses but also for lips and ears (p. 4).

3. Zeis had made a careful study of the work of Franco, for whom he felt that the French had made exaggerated claims; his researches had led him to an impartial assessment of Franco's merits (p. 7).

4. Zeis felt that Tagliacozzi had had too high an opinion of his own merits, as he did not give enough credit to his predecessors, to whose discoveries he did not really add anything new.

5. Zeis made a complete collection of the literature of "the reunion of completely separated parts," and thereby discovered and corrected various errors.

6. Zeis discussed the important question of how the Italian surgeons had arrived at the technique of making such beautiful noses, lips, and ears (p. 82). His careful study of Tagliacozzi's method of otoplasty in Ch. XI, which differs from the so-called *Italian* method, led him to the belief that the *Indian* method was already known in Italy at that time (p. 240).

7. Zeis added to our knowledge of rhinoplasty in India by (1) a study of Susruta's *Ayurvêda* (to which he had been introduced by the distinguished historian, Dr. Thierfelder, Sr., of Meissen), and (2) by his discovery of one of Wales' copper-plates of the Cowasjee episode (p. 78, No. 453). He felt that it was unlikely that the Italian surgeons in the Middle Ages derived their knowledge of the Indian "art" from the *Ayurvêda*, because at that time the Indian cuneiform script had not yet been deciphered. However, the similarity of the older procedure described by Susruta to that of Branca senior made it quite probable that the Italians somehow knew of the Indian methods.

8. Zeis made a detailed study of cheiloplasty—particularly the methods of Chopart and Dieffenbach.

9. Zeis made some new discoveries in the history of posthioplasty [reconstruction of the foreskin]—a procedure which, in ancient times, was held in higher esteem than any other plastic operation.

10. Zeis studied and evaluated some of the most recently developed plastic operations, although they were so new that no history could be written about them—in particular, uranoplasty [repair of the hard palate], repair of *ectopia vesicae*, and osteoplasty (although this was hardly an operation, but more a method by which the periosteum was retained to promote the formation of new bone).

His Contemporary Reputation

These strenuous efforts on behalf of plastic surgery should ensure our recognition of Zeis as one of the leading historians of the specialty. But his contemporaries were not always prepared to acknowledge his merits. He was evidently of a quarrelsome disposition. As writers of his obituary notices said: "His character was marred by an irritability of temper which showed itself under the slightest provocation," and "he was easily upset, and came into conflict with those around him. Although these storms quickly subsided and relations appeared to be restored to normal, he never got the recognition that his talents deserved."

A somewhat bigoted nationalism runs through his writings, with a tendency