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**THE ONGOING PRACTICE OF THE ART AND SCIENCE OF RHINOLOGY**  
(A penultimate discourse)

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While there is still time and a suitable podium still exists there is an urgent necessity — a duty — to look upon the nature of the human state and its progress in all of the manifestations of which one is aware and especially those which predominately occupy one's constant thoughts and working efforts.

The world turmoils, troubles and tribulations would tend to put one individual's life into the shadows of insignificance. But nevertheless each life, each life's work is important and oft times unique enough to deserve special consideration. In addition, some lives fortunately are of generous length and so well filled with much realistic experience that adding such records and values to the store of human knowledge is especially worth the time and effort.

In the long history of medicine, now is the most exciting time to be in this noble profession. The present social revolution all over the world will change the ways that medicine is practiced, but it is quite possible that the really violent force coming from the great drive forward in all science will bring many varied elements together and produce a tremendous growth of the human mind. Medicine will then become an immensely more powerful science for the solution of human problems.

With these thoughts in mind, we reminiscently approach an evaluation of the past and present status of the practice of the art and science of rhinology, and take a calculated look into its future.

Nasal surgery was performed thousands of years ago in India and Egypt when fractures and gross deformities of the nose were corrected.

Hippocrates described a method for the removal of nasal polyps. He wrote the immortal words, "Life is short, art is long, experience is fallacious and judgment difficult". Today we might add: Learning is laborious, knowing is precarious and deceiving, quoting is misleading, inexact and out of text. However, the truth will come out eventually, though its creators be neglected or belittled.

In the middle ages, advances in the practice of rhinoplasty were sensationally made known to a widening world by Tagliocozzi and the Brancas. In the early nineteenth century treatises on nasal diseases were published in France and Germany, but were limited in their scope to illness and deformities obviously and superficially available for examination. About one hundred years ago the development and use of the head mirror with reflected light and nasopharyngeal small mirrors made possible, with the assistance of nasal speculae, a more precise estimation of morphological and anatomical disturb-

ances in the inner recesses of the nose. Pathologic conditions were seen or presumed to be present and deductions concerning nasal functions and their disarrangements were made.

In more recent years, medicine and allergy therapies advanced remarkably, but surgical treatment moved only along the established strictly mechanical lines. Submucous resection operations reached their zenith in the beginning of the twentieth century under the leadership of such distinguished surgeons as Freer and Killian. Rhinoplasty and more specifically cosmetic nasal pyramid surgery received great impetus from the contributions of Roe, Joseph and Dufourmentel. Sinus surgery profited immensely from the basic and brilliant works of Mosher, Hajek and many others.

All these distant past and near past achievements remain the prevailing influence on the usual practices in these fields, and though they help maintain the line of accepted procedure, they at this time offer little to bring about major advances in the near or distant future. Metzenbaum, about forty years ago, initiated a new look at septum problems with his technics for moving the caudal end of the septum, an acknowledgment that this part of the partition had not previously received adequate attention.

About twenty years ago, Cottle, Loring and Fischer formally presented the intranasal maxilla-premaxilla approach to septum surgery. This technic has proven to be of inestimable value. Rhinologists all over the world have reported corroborating experiences and are engaged in teaching this methodology to their colleagues and students.

Recently two syndromes have been described: (1) compression of the middle turbinates and (2) impairment of the permeability of the maxillary ostia. Simple surgical means for relieving these abnormalities have rapidly developed and are now widely employed.

A new physiological look at rhinology is also in the making. It had important beginnings a hundred years ago when Hering and Breuer were engaged in research in respiration and discussed reflexes that they theorized initiated inspiration and expiration. Kratchmer and Kuttner directed attention to nasal neurological reflexes. Zwaardemaker made monumental contributions to olfaction. Kayser, Bloch, Goodale, Mink published important treatises on nasal breathing pressures, nasal temperatures and humidity variations. The original studies of almost one hundred years ago concerning nasal-antral breathing pressure relationships by Braune and Clasen, though startling, were fundamentally correct. Naso-pulmonary interdependence as seen in health and disease was described by Chauvet in classic manner as well as by others. These men and their wonderful works were all part of the official record of rhinology at the beginning of the twentieth century and showed the way to many subsequent great researchers who continued making important investigations concerning the physiology of the nose. To name a few, Samzelius-Lejdström, Sercer, Pietrantoni in naso-pulmonary relationships; Lillie, Uddstromer, van Dishoeck, Stoksted and Butler in the studies concerning nasal pressures and the work of breathing through the nose; Proetz, Flottes and le Dun (and their associates), Drettner in the field of naso-antral pressure experiments. Negus with the use of modern sophisticated electronic equipment brought much enlightenment to the problems of evaluating nasal functions and, incidentally, to helping point out what some of these functions are, while Ogura

and his co-workers, have evolved incontrovertible proof of the relation of nasal obstruction to maximal breathing capacity, timed vital capacity and pulmonary compliance. Masing's ingenious study of nasal air currents via water models helped elaborate the earlier opinions of Scheideler and Tonn-dorf.

Significant research in nasal physiology and its clinical application is mounting in Czechoslovakia, Holland, Scandinavia, France, Spain, Japan, United States and other countries and so a new large horizon is happily quickly becoming visible.

Of tremendous importance are the collateral researches in internal medicine which are concerned with the work of breathing through the nose as compared to breathing through the mouth, information especially applicable to the care of cardiac, pulmonary and other debilitated patients.

It was a startling experience to see in the literature during the last two years the many reports of impending fatal cardiac arrest occurring in young children. These children were, in general, being treated for congestive heart failure thought to be due to congenital anomalies, cardiomalacia, etc. They were eventually more thoroughly studied and the presence of pulmonary hyper-tension, hypoxia and hypercapnia was established. These children were helped and ultimately cured by treatment or removal of the tonsils and/or adenoids which were apparently causing severe embarrassment of respiration as a result of marked obstruction of the upper respiratory passages.

In this connection rhinologists have long been aware of the frequency with which young and older patients present themselves with severe serious symptoms referred to the chest; namely, angina, chest pains, restricted breathing, shortness of breath, gasping, choking, fatigue, inability to work, etc., who have responded to the relief of and the correction of obstructions in the upper respiratory tract especially those in the nasal chambers themselves. Prompt and lasting improvement has been very frequently observed and reported during the last few years together with similar salutary results involving other near and distant parts of the body.

We in the specialty are now faced with the obligation to review all aspects of rhinology from the point of view created by the vigorously emerging physiological concepts of nasal health and illness and their relation to systemic homeostasis.

Zarniko pointed out long ago, with a restatement by Zwaardemaker and again a reiteration twenty years later by Lillie, that progress in rhinology will depend on the creation and availability of a nasal function testing apparatus simple enough to be usable by all doctors practicing medicine.

A good start in this direction has already been achieved by those studying nasal breathing pressure and air flow measurements. Much valuable data have been accumulated, catalogued and published, enough to warrant placing at least one practical rather simple apparatus at the disposal of those who concern themselves with physiological characteristics of normal and abnormal nasal breathing. I believe Zarniko, Zwaardemaker and Lillie would be pleased. In addition to this, more elaborate apparatus such as the "conductivity oscillographs" of Spoor and van Dishoeck, nasal mucosal temperature and blood flow study equipment of Drettner, body plethysmographs, lung compliance and blood gas analysis apparatus are all generously available to us in research

and clinical centers, and we are becoming just as involved with nasal function studies as we became inextricably bound up with audiological methodology in otologic practice and with cardio-pulmonary function tests in thoracic disease.

We have learned that with changes of the permeability of the maxillary sinus ostium there occurs a variety of symptoms away from the nose including headache, sore throat, laryngeal and ear disturbances, cough, ocular discomforts, and systemic and neurological upsets. Reestablishment of a functioning ostium is so frequently and quickly followed by relief of complaints that it is deemed of prime importance to bring this clinical entity again to the attention of the profession. This and related maxillary ostium region inadequacies (M.O.R.I.) frequently give no obvious local regional manifestations and, therefore, this clinical complex is referred to as a "silent syndrome".

Rhinologists encounter a host of patients with symptoms referred to all segments of the head and chest, and also to other parts of the body. Often the complaints have persisted for many years and have resisted surgical and medical therapeutic measures for their alleviation and eradication.

Rhinologists have, however, had the gratifying and often repeated experience of seeing these same people receive remarkable clinical benefits following nasal surgery, be it septum reconstruction, sinus operations, cosmetic corrections, and/or polyp and other benign tumor removals.

On the other hand, many of the same disturbances frequently have been first noted following the same sort of nasal operations.

To know which patients might be expected to derive significant clinical benefits and why and what surgical events may cause clinical disturbances requires fuller understanding of nasal functions and their systemic correlations.

It is now quite apparent that correlating nasal activities with cardio-pulmonary-vascular functions will surely lead to greater enlightenment in the management of many common medical ailments. Many members of our societies are in the vanguard of this important contribution to medicine as is so beautifully manifested by the program being given here this morning.

Through our commitment to and involvement with these many newly recreated interests in physiological rhinology, we have helped significantly to inaugurate the beginning of the second century of the progress of our specialty. We have become able to see clearly the value of our lives and of our works and can sense the paths of glorious service to humanity which we together can all follow. Through our dedication to all aspects of our work in medicine, we shall, I am sure, acquire conscious concern for each other and all our fellow men. We shall recognize the need for becoming truly reasonable men and women of the world and cherish the opportunities to contribute to an international brotherhood of man.

This international brotherhood of the reasonable men of our profession will be a reliable and dependable one, grounded in the very depths of the good in man and as such it will lift up and sustain everyone of us especially when he is in need and alone.

One hundred fifty years ago, Kierkegaard, the great Danish philosopher and theologian, following the spiritual leadership of Martin Luther of the sixteenth century and the inspirations of the teachings of Saint Francis of Assisi of a

period three centuries earlier, wrote profoundly of God and the human state. With a bit of paraphrasing, I quote the following from his writings as a closing thought. "As long as man has not absolutely given himself over to his own divine calling he remains — despite all his good intentions — taken up with himself. This erotic attitude is passive. It wants only to receive. Christian charity — love — on the contrary is active. It is aware of an infinite obligation to another. But the paradox of this love is that only he who gives, receives; he who gives not receives not. Only giving love enlarges the self and assures freedom".

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