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TRENDS TOWARD THE SYNTONIC PRINCIPLE

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The employment of selected frequency bands from the visible range of the spectrum for the aid of vision and the control of its associated and supportive functions is comparatively new, and to Dr. Spitler, of Eaton, Ohio, must be extended full credit for his years of earnest laborious research and compilation of facts which has brought to you Optometric Eye Specialists such a far-reaching revolutionary Optometric technique.

As one delves deeper into the history preceding Syntonics, they are constantly confronted with the fact that the employment of the photic range of the spectrum was suggested and employed to some degree with apparently reasonably good results nearly half a century ago. It is not to be assumed that we have yet determined who was the first one to suggest or employ the photic range of the spectrum for alleviation of suffering but Seth Pancoast, M.D., in his book entitled, "Blue and Red Ray" published in 1877, pointed out that through the employment of light filtered through colored window glass he was able to effect a cure of various ailments. Of this we are certain – that Major Pleasanton about 1860 took a U.S, Patent for the use of colored glass in green houses to speed up plant growth, and it is interesting to note as late as November 1934, in the Clinical Journal, Dr. Earl S. Jonson of the Washington botanical institute reports that the most effect of all light wave lengths is a very narrow band in the neighborhood of 4400 A.U., which is in the blue part of the spectrum.

Color therapy, i.e., the raying of the entire body or certain areas of the individual, has been written of, discussed, and employed to a limited degree since that time, and is being thus used even at the present time. Probably White of California has written and done as much work along this line as anyone.

Syntonists, however, are not interested in color therapy, the raying of the body or areas of the body with different frequencies, nor in the use of ultra-short waves as a therapeutic agent. We are <u>solely</u> and completely concerned with the <u>work factor of light</u> and the employment of bands within the photic range for the aid of vision and control of its associated and supportive functions.

There can be no doubt that Rossini, a Psychologist at the London Refraction Hospital, London, England, has as closely, or perhaps more closely, approached Syntonics than has any other writer to date, but his approach to the subject was primarily from the psychological, rather than the physiological angle, and recent correspondence indicates that he practically ignores the tremendous effect which frequency bands from the photic range (Syntonics) have on bio-types.

In the Australian journals during the past five to ten years, there have appeared a considerable number of outstanding articles touching on various phases of Optometry. Opacities are not particularly prevalent in Australia, yet, there have appeared a number of interesting papers on the subject. A recent one from the pen of Collett shows that considerable study and thought was given to the preparation of his treatise. He is of the opinion (which I feel he has excellently expressed) that the majority of cataracts are formed because of faulty nutrition. The theory as to the etiology of cataract which is presented is a fairly rational hypothesis only, no one claims any finality for it. We do know, however, that anything which will deprive the lens of its nutrition long enough will cause cataract. Manifestly, traumatism will also cause it, so will kerosene and other chemicals. Collett states:

"Perhaps it is easier to understand the coagulation of lens proteins by an application of The ionization theory. Atoms, molecules, etc., either carry a positive or a negative charge. Substances which carry a like charge repel each other but substances which have an unlike charge attract each other. For example, Water (H_2O), H, is the acid constituent and carries a positive charge. O, is the alkaline constituent and carries the negative charge, and these two are attracted together to form H_2O, water.

The condition of a solution depends upon the concentration of the concentration of the hydrogen ions – providing there is sufficient like charges to repel each other the colloids will remain in solution – at a certain concentration the colloids are changed by ionization so that their respective charges are altered, and they will then be attracted by unlike colloids and coagulation will take place.

This is what takes place in the lens to form cataracts, the colloids are denatured by some means, and their ion concentration is changed, the particles are thereby attracted to each other and cataracts form.

To prevent this coagulation, we must introduce electrolytes into the lens which will increase dispersion of the protein colloids. Several alkaline substances appear to have this power, but from practical experience iodides appear to be most successful.

Although the knowledge that application of iodide drops or internal instillation of iodine is beneficial in clearing up lenticular opacities, is fairly recent, the cure of cataract has been occupying the minds of medical men for many years. In 1917, "M.D." writing in "The Refractionist," tells us that his treatment of senile cataract consisted of giving hypertonic saline solution together with the internal administration of sodium citrate. Although he admitted that several recent opacities cleared up under such treatment, he more or less apologized for his procedure. He says: - a bald statement to a patient that nothing can be done for their eye leaves them dissatisfied, and they then seek counsel or a doctor who has greater faith in the curative powers of his profession. Thus the growing practice among medical men who are handling cataracts is to prescribe treatment, with a mental reservation that little benefit was likely to accrue.

Again in 1932, "M.D." reports that during the last few years he has been prescribing hypertonic Saline solution with iodides as eye drops for incipient cataract with definite beneficial results. During the last few years reliable observes have noticed, after the administration of iodides over a long period combined with the instillation of the drug into the eye. That either an arrest of the evolution of the cataract or a manifest absorption of the existing opacity takes place. A German scientist, Dr. Pflugh, controlled these facts by provoking cataracts in rabbits, by giving naphthalin, and then injecting under the conjunctiva iodide of potassium in order to reduce the opacities. His results showed that the lesion was

> favorably influenced in 40 percent of the cases, and in applying similar treatment to early senile cataract in man even a more excellent proportion of successes was obtained."
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> Pflugh reports: - 54 percent greatly improved, 28 percent improved, 15 percent stationary.

You Syntonists, I feel confident, can more than match the results reported above on opacity cases.

Wishard of Ohio has reiterated in some of his recent articles that cataracts are due to lack of nourishment, and suggest therapy of desiccated extracts made from pig eyes, injected hyperdermically, in conjunction with iodine crystals, potassium and glycerine, instilled into the eyes daily.

The work of Guyer and Smith, Uhlemhuth and Roemer are also of outstanding importance along this line.

Last year an eminent Indian surgeon, Major Vincent Nesfield, F.R.C.S., who has probably done as many cataract operations as any other eye surgeon, lecturing in England on cataract, stated: -

> "One of the causes of cataract appears to be hereditary pre-disposition.
>
> Another cause is drinking tap water. There is one other important ingredient missing in tap water, and that is, iodine. Without iodine the patient feels weak, their eyes get bad, the lens hardened and the cataract developed. Therefore, if a patient comes with an early cataract, and does not mind a little inconvenience, a very good plan is to try to prevent it from getting any worse though treatments."

Nesfield reported a considerable number of patients who for seven years had been taken drops of tincture of iodine daily, and their cataracts were not developing. The prescription he gave was potassium iodine 1 dram, water 2 oz., 3 drops to be taken twice a day. With iodine shortage you get thyroid shortage, and therefore, he gave five grains of thyroid. It was, he claimed, an excellent remedy for preventing an early cataract from getting any worse.

From the above, it can be assumed that those suffering from lack of iodine, undoubtedly a contributing cause of goiter, will in the main, suffer from opacities; a fruitful thought for further Syntonic research. This we know, that goiter sufferers generally complain of vailing vision.

It will be quite apparent to you Syntonists, and the experience of most of you bears out the fact, that through employment of selected frequency bands, opacities are not only retarded, but in considerable percentage of cases completely or partially absorbed, and the above goes to prove that the basis on which Syntonics is founded is the premise on which others feel the problem can be successfully combated.

What a glorious future for Optometry if it only grasps its opportunity, and, with the knowledge, armamentarium, and technique, it can offer to a life-weary group of the older people, a simple, pointless, tasteless, far-reaching proved method of opacity control or elimination.

Comparatively few of us give any particular consideration to the Dagnini-Aschner Reflex, and there is much difference of opinion as to its interpretation and significance, but it is something which enters specifically and peculiarly into your Syntonic work.

This ocular-cardiac reflex causes a retardation of the heart beat when adequate pressure is exerted upon the contents of the orbit. It was first noted by Dagnini in June of 1908, and about four months later, Aschner described the same reflex, believing that it had not been previously reported.

The reflex is elicited as follows: -- The patient assumes a comfortable seat in a chair or reclines on a couch. He is requested to relax completely, both physically and mentally. After waiting a few minutes, the experimenter notes the properties of the radial pulse. The lids are now gently closed. With forefinger and thumb, the eyeball is forced steadily, but rather quickly, into the orbit in a downward, backward direction, and the reaction upon the pulse is observed as regards the frequency, amplitude, rhythm, force and volume.

The systolic and diastolic pressures are ascertained by an assistant taking a sphygmomanometric reading on the opposite side. The elecgtrocardiograph, will of course, give more complete details.

The reflex appears in a few seconds, and the time of the experiment need no continue more than a few minutes to obtain the necessary information. The pulse becomes slow full, and may even intermit.

Besides these pulsatory phenomena, the respiration may become deeper, less frequent, and occasionally spasmodic. General symptoms may appear, such as sensation of heat or cold, sweating headache, vertigo, faintness, substernal constriction, epigastric pain nausea, and vomiting.

The reaction is, in general, proportionate to the degree of pressure employed.

It will at once be apparent to you that if such a reaction can be mechanically elicited, probably not infrequently the same or approximate reactions are brought about through increased interocular or extraocular pressure.

A recent article by Bailey of New York covers the Dagnini-Aschner Reflex rather completely.

The foregoing only brings to a greater focus the thoughts of E.L. Jones, an outstanding Ophthalmologist of Cumberland, Maryland. Jones, during the past twenty-five years, has repeatedly directed attention to the fact that neuro-circulatory asthenia and other functional heart disorders are brought about through eye stress, eye strain or low astigmatic conditions – and Jones states that the frequencies with which certain surgical diseases can be mimicked, especially as regards the liver and gall-bladder, by eye stress is remarkable, and what is still more frequent, how after successfully performed operations the patient may bail or expected relief, which comes only after some perpetuating eye stress has been removed.

The experience of you Syntonic Technicians indicates that Dr. Jones is correct, and it is reasonable to assume that if these various conditions are brought about through eye stress, that conversely these conditions can be, have been, and will be, corrected through Syntonic Optometry.

Lewis J. Pollock, M.D., of Chicago, in a recent article, "Diseases of the nervous System Producing Dysfunction of Other Organs and Dysfunction of other Organs Producing or Simulating Diseases of the Nervous System" approaches this subject from a little different angle.

He points out that nervous disorders produce dysfunctions of other organs, causing digestive upsets, such as excessive or perverted appetites, dyspepsia, vomiting, dilation of the stomach diarrhea, constipation, spasm of the intestines, and mucous colitis. In fact, he goes down through an extensive list that is, to say the least, appalling. Pollock concludes: -

> "From this catalogue one may discern the inseparability of neurology from medicine and conclude only that the practice of medicine is the practice of neurology,"

We must accept such authoritative statements, and as Optometrists, become more fully cognizant of the fact that Optometry likewise cannot be separated from considerations of neurology in its broadest sense.

There can longer be any doubt that the medical profession is fast becoming aware of the fact that their knowledge thus far accumulated with reference to the employment of the electro-chemical spectrum on human beings is meager.

Ginsburg of New York in a recent paper entitled, "Ultra-Short Radio Waves as a Therapeutic Agent," states that he has given over ten thousand treatments employing ultra-short radio waves measuring less than fifteen meters.

> "The good results obtained by me in the treatment of Infections such as furuncles, carbuncles, cellulitis, superficial and deep abscesses, acute and chronic sinusitis, laryngitis, bronchitis, acute tonsillitis and periostitis, compare with the results obtained by Dr. Schiliepake; by Jena University; and others.
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> Pain, which is probably the most troublesome symptom in some of the aforementioned conditions, is markedly relieved and in many instances disappears after the first ultra-short wave treatment.
>
> Furuncles during the stage of induration clear up within two to four days after instituting treatment. Those advanced to the state of pus formation are usually cured in about a week without surgical intervention."

His treatment with ultra-short radio waves does not consist of currents entering the body by contact as in diathermy. In other words, the patient is interposed in a field of ultra-short radio waves being transmitted and acts as part of a condenser system. Ginsburg, of course ignores the work factor of the photic range of the spectrum entirely, but the conclusion at which he arrives are most thought provoking. He states: --

> "There seems to be evidence which points to the favorable influence of ultra-short waves on the sympathetic nervous system. I wish to emphasis that the ultra-short waves seem to possess the power to inhibit and even possibly destroy the activities of certain organisms and gives the body defense mechanism a better opportunity to cope with them."

You Syntonists will immediately recognize that if as Ginsburg has stated above, the ultra-short waves have a favorable influence on the sympathetic, such sympathetic influence will, of course, assist the defensive mechanism of the individual.

He proceeds: -

> "I believe that the immediate future will bring forth certain wave lengths which will inhibit the growth of, or even destroy organism such as tubercle bacilli, pneumococci, streptococci, and all of which are most resistant to the present form of treatment. A further speculation with regard to the usages of the ultra-short waves lies in its selectivity for the different tissue cells in the human body. Because of this selectivity it will then be possible, when these waves are better understood, to treat a certain organ in the body with disregard for other organs that lie in the path of the ultra-short waves.
>
> Mental diseases, organic and function, form another field where treatment with the ultra-short waves may possible prove beneficial. I believe that every normal tissue cell has a radio frequency of its own and that when these cells become changed as a result of disease their frequency is also changed, and then by the application of the ultra-short waves of the proper frequency to the abnormal tissue, it will be possible to restore diseased tissue to normal function."

Francis Blackmar in a recent article in the Larynoscope, entitled, "The Autonomic Level" has very splendidly covered the antagonism of the sympathetic and parasympathetic systems. In well-chosen words he states: -

> "The parasympathetic system directs the accumulation of reserves. The sympathetic system directs the expenditure of these reserves. Thus in the liver glycogen accumulation results from parasympathetic stimulation. Glycogen is mobilized as blood sugar when the sympathetic nerve supply is stimulated. In sleep the parasympathetic system should

> dominate in order that the reserves of the body can be reaccumulated for the next day's work. In extreme danger the sympathetics take complete control for the period of the emergency.

Blackmar states that Jarvis and other of his friends have over a long period studied the clinical pictures of pale and red nasal septa, and applied these observations to determine whether the patient is controlled by the sympathetic or parasympathetic systems. (this being possible only if the septal color is not influenced by local pathology). He uses a clever device which he has named the "Septascope". An instrument with an illuminated opening, divided into two parts, which is held against the septum – one half for viewing the septum and the other half carrying a series of red which are matched to the color of the septum. An arbitrary set-up of findings are used 1-2- or 3 red – or, 1-2-3- pale.

Their diagnosis is based upon the belief that a RED septum indicates Sympathetic dominance, and PALE septum indicates parasympathetic dominance. He further stats: --

> "A patient in whom the sympathetic system has persistently dominated for days, weeks or years may give a history of nocturnal restlessness, arising unrefreshed by the night's rest and becoming drowsy during the day. They may be eaters of meat, eggs, fish, slat or sweets in excess. If they are not open air workers provided with a plentiful supply of calcium and other minerals in their diet they are likely to exhibit dental caries. They are subject to frequent infections by staphylococci, and are susceptible to streptococci in infection, if contaminated by a virulent strain of this germ.
>
> Due to this predisposition to infection by the two most frequent infectious agents, such a patient's autonomic levels said to be in the "infection zone". This statement will be explained later.
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> Their nasal septa are typically red. A patient with a dominant parasympathetic system has a pale septum and often presents some combination of the following conditions: - angioneurotic edema, itching skin, migraine, asthma, eczema and digestive disturbances. They frequently give a history of gall duct obstruction, are heavy sleepers, unless in one of their frequent periods of nasal obstruction. They are as a class subject to "catarrh" and colds, but it will be found that these colds are primarily vasomotor disturbances with eosinophiles predominating in their nasal secretions even though infection may become a secondary process. They are frequently fruit and vegetable eaters with little meat, eggs, fish, or salty foods. Low blood pressure is the rule in their youth but frequently their blood pressure will rise with alarming rapidity, especially in later life. Such elevated blood pressures in the author's

experience are usually corrected by measures used to balance their autonomic level.

The accepted factors exerting force tending to shift the autonomic level are the acid-base ingestion ratio, the sodium-potassium equilibrium, the fluid intake, and the glandular equilibrium. It may be that the acid-base and the sodium-potassium intake factors really act through their effect upon the endocrine glands. At the top of the chart are placed the factors exerting a pull on the autonomic level toward sympathetic dominance. An excessive intake of acids over alkalies tends to produce a shift toward sympathetic dominance, an excess of sodium exerts a similar force accompanied by a greater tolerance for fluids. The glands whose secretions exert a force toward sympathetic dominance when stimulated are the suprarenal, thyroid, and pituitary glands.

On the lower part of the chart are grouped the factors tending to result in parasympathetic dominance. They are an excessive intake of alkalies, and potassium associated with a poor tolerance for fluids and excessive pancreatic activity in relation to the suprarenals, thyroids and pituitary.

Therapeutic agents are used in the hope that they will produce a shift of the autonomic level, shorten specific lines or widen the symptom-free zone as a whole. Pharmacology and endocrinology have been busy for years supplying us with agents to shift the autonomic level. Examples are atropine, serine, hydrochloric acid, table salt, alkalies of various types and the glandular extracts singularly or in various synergistic combinations. With the use of almost every local application or internal medication one is found with the choice of several agents, some of which aside from their special indications, are anabolic, catabolic, or neutral in reference to the autonomic level. Due to an inability to estimate the patient's autonomic level the safest agents have been those whose effects upon the autonomic system were lessened or prevented by combining ions with equal effect on the two sides of the equilibrium. After years of practice clinicians who were close observers become able to develop a sixth sense which told them in which direction the autonomic level should be shifted. They seldom if ever thought in terms of the autonomic system, But if we study the therapy of the better empirical clinicians it will be seen that the man with years of experience has slowly and painfully learned that his best results were obtained when he accomplished exactly what we do when we fit our therapy to the autonomic level as visualized with the aid of color of the nasal septum."

My reason for quoting the above is not because the idea is particularly new, but because, I believe, some of you Syntonists should be vitally interested, as a research problem, on the color of the retina in the Asthenic and Pyknic types, and changes produced through Syntonizations.

I believe that the retina is a far more fertile field for diagnostic endeavor than is the septum, for I hazard the guess that experience will prove that these changes take place in the retinae more promptly, and to a greater extent than they do in the septum.

The foregoing, my Optometric friends, are, only a few specific trends toward the Syntonic principle.

It is, therefore, a justifiable pride for you members of this College of Syntonic Optometry, due to the splendid ground work of Dr. Spitler, and your wholehearted cooperation in gathering data of far-reaching consequence during your daily employment of Syntonics, to feel that each one is playing his own part in constructing a firm foundation for further and Syntonic developments – a complete renovation of Optometric thinking – and a tremendous expansion of Optometry's scope of Service.

Truly, through Syntonic Optometry, you offer the public in its fullest sense a Service of: -

PROTECTION,

PERFECTION – and

PRESERVATION OF VISION.

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