Discover the Truth

"[U]seless, or nearly useless." This is how the June 2004 issue of Discover magazine (pp. 42-45) refers to such things as the coccyx, appendix, and other supposed vestigial organs. I will deal with just a few of the examples given in the article which will allow the reader to investigate the matter more closely via the references cited. However, before I begin, let me give an example of a once supposed vestigial organ, and then comment on the good or harm such thinking inflicts on medicine… depending on one's philosophical starting point. Bear with me.

Tonsils

In the 1930's over half of all children had their tonsils and adenoids removed. In 1969, 19.5 out of every 1,000 children under the age of nine had undergone a tonsillectomy. By 1971 the frequency had dropped to only 14.8 per 1,000, with the percentage continuing to decrease in subsequent years. Most medical authorities now actively discourage tonsillectomies.[1] Many agree with Wooley, chairman of the department of pediatrics at Wayne State University, who was quoted in Katz: "*If there are one million tonsillectomies done in the United States, there are 999,000 that don't need doing.*"

Among the first medical doctors to seriously question the wisdom of tonsillectomies was Albert Kaiser. For ten years he kept complete records of the illnesses of 5,000 children. They were divided into two groups – those who had tonsils removed and those who did not. Kaiser found: "*…no significant difference between the two groups in the number of colds, sore throats and other upper respiratory infections.*"[2]

Tonsils are important to young people in helping to establish the body's defense mechanism which produces disease-fighting antibodies. Once these mechanisms are developed, the tonsils shrink to almost nothing in adults, and other organs take over this function.[3] In the Medical World News,[4] a story stated that although removal of tonsils at a young age obviously eliminates tonsillitis (the inflammation of the tonsils) it may significantly increase the incidence of strep-throat and even Hodgkin's disease. In fact, according to the New York Department of Cancer Control: "*…people who have had tonsillectomies are nearly three times as likely to develop Hodgkin's Disease, a form of cancer that attacks the lymphoid tissue*."[5]

The Point

My point is this, the Tonsils were once included in a list of 180 vestigial ("*useless, or nearly useless*") organs.[6] And because the assumption was **first made** that these were organs left over from a previous genetic ancestor (ape, dog, early-man, whatever), that they were deemed useless – *ad hoc* – because science did not know ***at that time*** what their functions were.

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[1] Robert P Bolande, *"Ritualistic Surgery – circumcision and tonsillectomy,"* New England Journal of Medicine, March 13 (1969) pp. 591-595; Alvin Eden, *"When Should Tonsils and Adenoids be Removed?"* Family Weekly, September 25 (1977), p. 24; Lawrence Galton, *"All Those Tonsil Operations: Useless? Dangerous?"* Parade, May 2 (1976), pp. 26ff; Dolras Katz, *"Tonsillectomy: Boom or Boondoggle?"* The Detroit Free Press, April 13 (1972), p. 1-C; Samuel Lipton, On the Psychology of Childhood Tonsillectomy. In: The Psychoanalysis Study of the Child (International Universities Press, New York: 1962).

[2] Galton, p. 26.

[3] Martin L. Gross, The Doctors (Random House, New York: 1966); Simpson Hall, Diseases of the Nose, Throat and Ear (E. and S. Livingston, New York: 1941).

[4] N. J. Vianna, Peter Greenwald, and U. N. Davies, September 10, 1973, p.10

[5] Galton, p. 26-27.

[6] This is an important issue, for instance, during the famous Scopes trial in 1925 – which allowed evolution to be taught alongside creation – zoologist Horatio Hacket Newman, a defense witness, stated: "*There are, according to Wiedersheim, no less than 180 vestigial structures in the human body, sufficient to make of a man a veritable walking museum of antiquities*."

So for many years, doctors and scientists that accepted the evolutionary paradigm did not investigate the possible functionality of these organs. Many people suffered and died needlessly due to this philosophical assumption that evolution is true. You will see this assumption play out again and again where medical science and the evolutionary issue intersect. You see, if you come to the table with an understanding that we were created, then these structures serve a purpose, or are a neutral combination of the possible male/female outcome of the fertilized egg (for instance, male nipples[7]). If the assumption is made that these structures are designed, then the medical world would strive to investigate and understand the organ in question, not simply state that it is useless.

Fallacious Arguments

If the medical world does not know the function of a particular organ, then a person cannot *ipso facto* conclude that it is useless. This is called in logic, *argumentum ad ignorantiam,* or, an argument to ignorance, and is considered a fallacious argument (e.g., void of reason). "*The argument from ignorance can be used to shift a burden of proof merely on the basis of rumor, innuendo, or false accusations, instead of real evidence*."[8]

The Appendix

Dr. Kawanishi,[9] showed that human lymphoid cells in the appendix are immunologically functional as *T* helper cells and antibody-producing *B* cells, making *IgA* molecules in response to immunological challenges. He noted that:

> "*The human appendix, long considered only an accessory rudimentary organ, could posses a similar antigen uptake role prior to replacement by fibrosed tissue after repeated subclinical infections, or at least in early childhood when it is most prominent.*"[10]

The appendix is also rich in argentaffin cells, which can be identified with the use of silver salt staining. The function of these cells has long been obscure, but the evidence suggests that they may be involved with endocrine gland function.[11] Many sources (encyclopedias, textbooks, etc.) still erroneously state that the appendix is useless. Interestingly, the Grolier Multimedia Encyclopedia states in one place: that "*In humans the cecum and appendix **have no important function**,*" and in another place that "*the appendix **is now thought** to be one of the sites where immune responses are initiated.*"

> Dr. Howard R. Bierman… studied several hundred patients with leukemia, Hodgkin's disease, cancer of the colon and cancer of the ovaries. He found that 84% [of his sample] had [their] appendix removed…. In a control group without cancer, only 25% had it removed.[12]

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[7] Also, if created by a personal God who has created sex to be pleasurable, then the nipples have a purpose other than the neutral canvas of the fertilized egg.
[8] Robert Audi (general editor), The Cambridge Dictionary of Philosophy, second edition (Cambridge University PressNew York: 199), P.434.
[9] H. Kawanishi, *"Immunocompetence of Normal Appendiceal Lymphoid cells: in vitro studies,"* Immunology, 60(1) (1987), pp. 19-28.
[10] Ibid., p. 19.
[11] Marti-Ibanez (editor), *"Tuber of Life,"* M. D. Magazine (1970) #14, p. 240; William J. Banks, Applied Veterinary Histology (Williams and Wilkins, Baltimore: 1981), p. 390.
[12] Richard G. Culp, Remember thy Creator (Baker Book House, Grand Rapids,; MI: 1975).

Bierman himself had concluded that the appendix may be an immunological organ whose premature removal during its functional period permits leukemia and other related forms of cancer to begin their development.[13] Bierman and his associates realized that the lymphoid tissue located on the walls of the appendix may secrete antibodies which protect the body against various viral agents.

While high school and college textbooks today will mention the appendix as vestigial, specialists in their field have for *many years* stated the necessity of the appendix as useful.

> "*There is no longer any justification for regarding the vermiform appendix as a vestigial structure.*"[14]

> "*For at least 2,000 years, doctors have puzzled over the function of… the thymus gland…. Modern physicians came to regard it, like the appendix, as a useless vestigial organ which had lost its original purpose, if indeed it ever had one. In the last few years, however,… men have proved that, far from being useless, the thymus is really the master gland that regulates the intricate immunity system which protects us against infectious diseases…. Recent experiments have led researchers to believe that the appendix, tonsils, and adenoids may also figure in the antibody responses.*"[15]

> "*The appendix is not generally credited with significant function; however, current evidence tends to involve it in the immunologic mechanism.*"[16]

> "*The mucosa and submucosa of the appendix are dominated by lymphoid nodules, and its primary function is as an organ of the lymphatic system.*"[17]

The appendix is in fact part of the G.A.L.T. (Gut Associated Lymphoid Tissue) system. The lymphoid follicles develop in the appendix at around **two weeks after birth**, which is the time when the large bowel begins to be colonized with the necessary bacteria. It is likely that its major function peaks in this neonatal period.

As Dr. Peter Faletra (Ph.D.), who is Senior Science Advisor Office of Science Department of Energy, says in response to a question on an online question-and-answer service for K-12 teachers run by the Argonne National Laboratories:

> *"As a histologist I see no reason to consider the v. appendix as having no function since it contains numerous lymphoid follicles that produce functional lymphocytes and a rich blood supply to communicate them. The general idea of vestigial organs is to me a measure of ignorance, arrogance and lack of imagination. Ignorance in that we label it as such because we do not know its function; arrogance in that we declare it of no value since we can see none; and lacking in imagination in so far as when we cannot see its function cannot imagine one. I call your attention to that other '*vestigial organ'*the thymus without which, in early life, we would produce a severely compromised cell-*

[13] Howard R. Bierman, *"Human Appendix and Neoplasia,"* Cancer 21 (1) (1968), pp. 109-118.
[14] William Straus, Quarterly Review of Biology (1947), p. 149.
[15] "*The Useless Gland that Guards Our Health*," in Reader's Digest, November (1966), pp. 229, 235.
[16] Henry L. Bockus, Gastroenterology, 2:1134-1148 [chapter *The Appendix*, by Gordon McHardy], (W.B. Saunders Company, Philadelphia, Pennslyvania: 1976).
[17] Frederic H. Martini, Ph.D., Fundamentals of Anatomy and Physiology, (Prentice Hall, Englewood Cliffs, New Jersey: 1995), p. 916

> *mediated immune system as the 'nude' mouse and numerous thymectomized mammalian studies have shown.* ***Although some general reference books still list the v. appendix as 'vestigial' most immunologists (I included) would strongly disagree****!"*[18] (emphises added)

Coccyx

Let me start this topic with a quote from Isaac Asimov:

> "*If there is any doubt that the coccyx represents a tail and not something else entirely, the answer lies in the study of the developing human embryo. In the early stages a small but distinct tail region is formed. By the eighth week of development it is gone, but its evanescent existence would seem to make it clear, that man descended from some creature with a tail, and that he still carries about with him, hidden below the skin, a last evidence of it."*[19]

I want to make clear that Asimov understood that the embryonic tail *is* the early stages of the coccyx. I will quote another authority on the embryonic *"tail:"*

> *"…although the human embryo has a short stub of a tail for a while and this is precisely similar to the short stubs that become tails in many other species, the human tail stub only forms the basis of the human coccyx. Mankind* ***does not*** *travel up the trunk of the animal tree with each embryo…."*[20]

Professor Gould noted that at four weeks humans have a well-formed tail, which is larger at that time than their legs.[21] In its development, the human embryo appears to have a tail simply because **there is disproportionate development of various parts of the fetal skeleton**. Asimov believed the coccyx to be useless, so the precursor to the coccyx in the fetal development stages, would, of course, be useless to. However, Asimov knows that it doesn't "*disappear,*" as in *gone gone*! He plainly states that the tail is "*… still carrie[d] about with him, hidden below the skin*" – referring to the coccyx (which was stated at the beginning of his quote).

> "Far from being a useless evolutionary leftover, the coccyx is quite important in human development. True, the end of the spine sticks out noticeably in a one-month embryo, but that's because muscles and limbs don't develop until stimulated by the spine. As the legs develop, they surround and envelop the coccyx, and it winds up inside the body."[22]

After reading the Discover magazine article of June 04', it seems that the coccyx is of no high value.

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[18] From the site ***Newton***, which is an electronic community for Science, Math, and Computer Science K-12 Educators. Argonne National Laboratory, Division of Educational Programs, Harold Myron, Ph.D., Division Director. Quote:http://www.newton.dep.anl.gov/askasci/mole00/mole00225.htm Home page: http://www.newton.dep.anl.gov/

[19] Asimov, The Human Body: Its Structure and Operation, (Houghton Mifflin, New York: 1963), p. 39.

[20] Anthony Smith, The Body (Viking Penguin, New York: 1986), p. 118.

[21] Stephen J. Gould, *"Fascinating Tails,"* Discover (1982), p. 41.

[22] http://www.christiananswers.net/q-e...n/edn-c024.html

Functionality[23]

The coccyx is triangular and attached to the bottom of the sacrum. Its name "*coccyx*" means cuckoo; it was named because of its resemblance to a cuckoo's bill. Because it is not connected to the ribs, the coccyx does not have pedicles, lamina, or spinous processes that are present on certain other vertebrae. The coccygeal vertebrae have only three transverse grooves that provide an attachment to the ventral sacrococcygeal ligaments and the *levatores ani*, two broad thin muscles that form part of the hammock-like floor of the pelvis. These muscles function as a single sheet, which extends across the middle line, forms the principle part of the pelvic diaphragm and supports the rectum. The coccygeus muscle also helps to support the posterior organs of the pelvic floor, especially during blocked forced expiration, as in elimination.

The *coccygeus* muscle can draw the coccyx ventrally to give added support to the pelvic floor against abdominal pressure. It draws the coccyx forward after defication. This muscle is inserted by its base into the margin of the coccyx and into the side of the last section of the sacrum. The coccygeus muscle consists of the *levator ani* and the *prirformis* which enclose the back part of the outlet of the pelvis.

In females, the coccygeus muscle draws the coccyx forward after it has been pressed back during parturition. Anthony Smith, in his book The Body, reported that the movements of the coccyx help to enlarge the birth canal during childbirth. The *levator ani* muscles constrict the lower end of both the rectum and the vagina, drawing the rectum both forward and upward.[24] Far from being remnants of muscles that pull *the tail down in a dog*, as Harvard University's Press textbook, Human Structure, says, as well as others claim, but the small sling of muscles attached to the coccyx serves several functions.

On the left and right dorsal surfaces of the coccyx is located a row of tubercles called the "*rudimentary articular processes.*" However, they are "*rudimentary*" only in the sense that they are smaller than the tubercles on the thoracic vertebrate. The larger first pair, the *coccygeal cornua*, articulate with the cornua of the sacrum and allow some movement. On the opposite side are the openings called foramina – openings for the transmission of the dorsal division of the fifth sacral nerve. The narrow borders of the coccyx receive the attachment of the *sacrotuberous* and *sacrospinous* ligaments laterally for support of the bones, the coccygeus muscle ventrally, and the *gluteus maximus* muscle dorsally.

The oval surface of the coccyx base articulates with the sacrum. Gray[25] pointed out that the rounded apex or lowest part of the coccyx is attached to the tendon of the *sphincter ani externus* and its movement can be bifid, meaning that it can be deflected to both sides, and thus make bowel movements possible. Also, Gray discussed the *anococcygeal raphe* which is a narrow fibrous band that extends from the coccyx to the margin of the anus.

Citing an anatomy textbook, S. R. Scadding concluded this very succinctly by stating that several muscles and ligaments insert on the coccyx.[26] Walker noted that it is the coccyx "*…to which certain anal and perineal muscles attach.*"[27] Wieschnitzer reported in his textbook, *Outline of Human Anatomy*, that the

[23] see: Jerry Bergman, George F. Howe, Vestigial Organs Are Fully Functional (Creation Research Society Books, Kansas City: MO: 1990).
[24] Catherine Anthony, Textbook of Anatomy and Physiology, Sixth Edition, (C. V. Mosby, St Louis: 1963), p. 411.
[25] Henry Gray, Gray's Anatomy (Lea Febiger, Philadelphia: 1966), p. 130.
[26] R. S. Scadding, *"Do Vestigial Organs Provide Evidence for Evolution?"* Origins Research 6(2), pp. 4-6. This paper was originally published in Evolutionary Theory 5:173-176 (1981).
[27] Warren F. Walker, Functional Anatomy of the Vertebrates: An Evolutionary Perspective (Saunders College Publishing, Philedelphia: 1987), p. 253.

iliococcygeus muscle "*…supports and raises the pelvic floor.*"[28] He indicated that the *iliococcygeus* is inserted on terminal parts of the coccyx.

Without the coccyx and its attached muscle system, humans would need radically different support system for their internal organs, which would require numerous design changes in the human posterior. Concerning the coccyx and its importance, Dorothy Allford puts all the above textbook talk into perspective:

> "*The posterior surfaces [of the coccyx] serve as attachments for the gluteus maximus muscle and the sphincter and the extermus muscles. The gluteus maximus muscle is essential for deification and labor during childbirth. The sphincter ani externus muscle is needed to keep the anal canal and orifice closed. These are obviously very important functions. The interior surfaces of the coccygeal vertebrae also serve as important attachments for muscles that aid in the containment of feces within the rectum… [as well as control of] defecation, and the expulsion of the fetus during labor. For these important reasons, the coccyx can never be classified as a rudimentary or vestigial rudiment of our ancestors.*"[29]

Another M.D. wrote in a 1988 article entitled "*Vestigial Organs,*"

> "*Individuals who injure the tail-bone may develop a painful condition called coccydynia. Removal of the coccyx presumably because it is thought to be nonessential, seems to be a poor operation. I counsel my patients with tail-bone pain to resist removal of the coccyx if ever suggested.*"[30]

The coccyx is not the only support system of the internal organs; the diaphragm and other muscles also help fulfill this role. If the coccyx is surgically removed, enough surrounding support structure consisting of bones, cartilage, muscle, ligaments, and tendons, participate in taking over most of the loss of function by the removed coccyx.

Dr. Evan Shute, in his book Flaws in the Theory of Evolution, commented on the procedure of surgery of the coccyx. Shute noted that the vestigial organ argument is not realistic:

> "*Take it away and patients complain; indeed the operation for its removal has time and time again fallen into disrepute, only to be revived by some naïve surgeon who really believes what biologists have told him about this useless 'rudiment'.*"[31]

The coccyx is termed vestigial merely because of the position at the end of the spine. The evolutionist would interpret this area as the area of a tail in our past evolutionary lineage. But as Cora Reno states: "*The coccyx… is merely the terminal portion of the backbone. After all, it does have to have an end*!"[32]

[28] Saul Weischnitzer, Outline of Human Anatomy (University Park Press, Baltimore: 1978), p.285
[29] Instant Creation – Not Evolution (Stein and Day, New York: 1978), p. 42.
[30] Robert H. Franks, *"Vestigial Organs,"* Ex Nihilo 10(2), p. 24.
[31] (The Temside Press, London: 1961), p. 40.
[32] Cora A. Reno, Evolution on Trial (Moody Press, Chicago: 1970), p. 81.

What Does It All Mean?

The Main reason I have written this small critique of the June 2004 Discover article is to make a point. At one time Discover magazine thought that these vestigial organs were completely useless and left over proof of earlier ancestral forms. Now they are at least admitting the possibility of a minor use, however, still discounting their usefulness for the most part while still maintaining that they are proof of an ancestral form.

I have shown that one cannot infer this supposition upon these organs and structures. In fact, they end up being very purposeful, and tend to lean towards a specified use, which implies design – and hence, a Designer.

All these arguments end up much like the following analogy, "*surgically removing the pinky finger does not in any way hinder the hands usefulness. One can still play baseball, pick his or her nose, and write… therefore, the pinky finger is a vestigial structure.*" Often, if a scientist or doctor comes out and rejects the evolutionary paradigm, or at least some of its major tenants… well, I will agree with former editor of the New Scientist magazine that "t*he scientific establishment bears a grisly resemblance to the Spanish Inquisition. Either you accept the rules and attitudes and beliefs promulgated by the 'papacy' (for which read, perhaps, the Royal Society or the Royal College of Physicians) or face dreadful retribution. We will not actually burn you at the stake, because that sanction, unhappily, is now no longer available under our milksop laws. But we will make damned sure that you are a dead duck in our trade*"[33]

Addendum[34]

I would be remiss if I didn't mention one of the largest insurance scams in medical history! What's the scam you ask? Third-molars, or, *"Wisdom Teeth."* One study, published in the British Dental Journal,[35] which reviewed twelve other studies found that there *"is little justification for the removal of pathology free impacted third molars."* Furthermore, in an extensive study of aberrant maxillary third molars, the researcher found a lack of evidence for a genetic trend towards elimination of the third molar from human dentition as assumed by many evolutionists.[36] Diet is the reason most who study this issue conclude is the problem. The fact that impacted teeth are rarely seen in animals and non-technologic human societies indicates that some change in humans that occurred in their recent past is responsible.[37] [38] [39]

The earlier human diet as well (as some currant cultures) tended to be more abrasive *"which caused attrition of teeth,"* according to Dr. Singh[40] resulting in total arch length[41] to become less. Especially has

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[33] Donald Gould, *"Letting poetry Loose in the Laboratory,"* New Scientist (August 29, 1992), p.51.

[34] This is added recently to address one of the more commonly used example of mankind's supposed *"evolution."* In fact, it is - if true - an example of ***devolution***. Darwinism demands a net gain in the specificity of information in the gene, not a loss of.

[35] Song, F, (1997) *"Prophylactic Removal of Impacted Third Molars: An Assesment of Published Reviews,"* 182(9):339-346.

[36] Taylor, M.S., 1982. Aberrant Maxillary Third Molars; Morphology and Developmental Relations. In: Kurten, B. (ed.), Teeth, Form, Function and Evolution (Columbia University Press, New York: 1982) pp. 64-74.

[37] Calcagno, J. M. and Gibson, K. R., (1988) *"Human Dental Reduction: Natural Selection or the Probable Mutation Effect,"* American Journal of Orthodontics, 77:505-517.

[38] MacGregor, A. J., The Impacted Lower Wisdom Tooth (Oxford University Press, New York: 1985) p. 3.

[39] Corruccini, R., (1991) *"Anthropological Aspects of Orofacial and Occlusal Variations and Anomalies."* In: Advances in Dental Anthropology, Chpt. 17. Kelley, M. A., and Larson, C. S. (eds) (Wiley-Liss, New York: 1991) p. 308.

[40] Singh, H., Lee, K., and Ayoub, A. F. (1996) "*Management of Asymptomatic Impacted Wisdom Teeth: A Multicultural Comparison,"* British Journal of Oral and Maxillofacial Surgery, 34:389-393.

[41] The widths of all teeth added together.

"processed foods caused consequential reduction in masticatory[42] *demands resulting changes in teeth-jaw relationship which could lead to malocclussion*[43] *and wisdom teeth."*[44] It has been shown that human teeth continually migrate in two different directions throughout life, horizontally and vertically. Sampled skulls of Australian Aboriginals who had died before the *"Westernization"* of Australia by the British and who had consumed a diet judged *"late Paleolithic,"* show that the course, hard gritty, fibrous and unprocessed diet causes inter proximal and occlusal[45] attrition which *"permits all the lower deciduous teeth to move gradually forward relative to the uppers."*[46]

All this is to say that due to change in our diet as modern man eats a softer more processed food, teeth movement and wear do not accommodate the third molars as well as other current cultures with a more abrasive diet. Keep in mind that: **a)** none of this is due to mutations, and, **b)** none of this is due to genetics… much to the evolutionists chagrin.[47] Lombardi, in a summary of the research on diet and dental crowding concluded,

> *"Dental crowding is endemic among technologically advanced populations and uncommon in primitive groups. The significant elements in the development of most dental crowding are mesial*[48] *migration and the lack of inter proximal attrition. Mesial migration of posterior teeth provides the functional replacement for the tooth surface lost to attrition because of the rigors of a primitive diet. In modern man there is little attrition of the teeth because of a soft, processed diet; this can result in dental crowding and impaction of the third molars."*[49]

In short, this theory concludes that:

> *"… that proximal wear is highly correlated with the chewing force required by the diet. A diet consisting largely of tough foods, such as nuts, seeds, fibrous vegetables, and partially cooked meats, requires high chewing forces that cause lateral movement of the teeth relative to each other. This rubbing of adjacent teeth is the cause of inter proximal wear, although it accounts for most of the occlusal wear. Advanced populations that consume a diet composed largely of cooked meats and vegetables, as well as processed foods, do not require the large chewing forces that lead to lateral movement of the teeth and inter proximal wear. The low incidence of crowding in primitive populations seemingly results from a high degree of inter proximal attrition and not from a more harmonious concordance of tooth jaw size."*[50]

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[42] *"chewing"*

[43] malocclusion: *Dentistry*. *"faulty occlusion; irregular contact of opposing teeth in the upper and lower jaws"* Random House Webster's Unabridged CD-ROM Dictionary (1999).

[44] Singh, H., Lee, K., and Ayoub, A. F. (1996) "*Management of Asymptomatic Impacted Wisdom Teeth: A Multicultural Comparison,"* British Journal of Oral and Maxillofacial Surgery, 34:391

[45] occlusal: *Dentistry* (def. 2). *"the fitting together of the teeth of the lower jaw with the corresponding teeth of the upper jaw when the jaws are closed"* Random House Webster's Unabridged CD-ROM Dictionary (1999).

[46] Begg, P. R., (1954) *"Stone Age Man's Dentition,"* American Journal of Orthodontics, 40:298-312.

[47] MacGregor, A. J., The Impacted Lower Wisdom Tooth (Oxford University Press, New York: 1985) p. 3.

[48] mesial: *Dentistry*. *"directed toward the sagittal plane or midline of the face, along the dental arch"* Random House Webster's Unabridged CD-ROM Dictionary (1999); sagittal: *Anatomy* (def. b) *"(in direction or location) from front to back in a median plane or in a plane parallel to the median,"* ibid.

[49] Lombardi, V., (1992) *"The Adaptive Valve of Dental Crowding. A Consideration of the Biological Basis of Malocclusion,"* American Journal of Orthodontics, 81:38-42.

[50] ibid.

Muscle movement and stress in these fibrous diets are also linked to stimulation in jaw growth and length.[51] [52] [53]

> *"… in modern civilized man a change of diet has occurred in the last 2000 years or so and that as a result the teeth are underused and not worn down… the discovery of cooking made chewing less necessary [and]… in the last 250 years in Western civilization there has been a rapid development of technology, the calorific values of manufactured foods has become more concentrated, refined sugars widely available and the abrasive and the abrasive content of some food, particularly flour, has been markedly reduced by modern milling.*
>
> *The results have been that the dentition has not been reduced in size as it should have been by attrition, and it is this that accounts for the increase in impactations. There is a rider to this second view and it is that dental attrition requires a high degree of muscle activity which in turn stimulates jaw growth. In the absence of constant chewing the jaw does not reach full size and therefore, in those who eat high-calorie cooked food, there is an increased risk of malocclusion."*[54]

In short, when the chewing workload is reduced, the mandible and jaw muscles atrophy, and when chewing workload is increased, the muscles strengthen and the jaw develops. Other dental problems such as malocclusion are also *"widely believed to a disease of civilization, and to be largely confined to recent man of European decent."*[55] In fact, in 13-15% of patients the third molar never develops due to the small jaw length due to atrophy from diet or health.[56]

The once common belief that wisdom teeth problems are related to putative evolutionary modifications has now been discredited! MacGregor concluded in an extensive study that the "increase of brain size at the expense of jaw size" evolutionary view is invalid and that the:

> *"Evidence derived from paleontology, anthropology, and experiment indicates very convincingly that a reduction in jaw size has occurred due to civilization. The main associated factor appears to be the virtual absence of inter proximal attrition, but initial tooth size may have some effect. Jaw size and dental attrition are related and they have both decreased with modern diet. Jaws were thought to be reduced in size in the course of evolution but close examination reveals that within the species Homo sapiens, this may not have occurred. What was thought to be a good example of evolution in progress has been shown to be better explained otherwise."*[57]

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[51] Goose, D. H., *"Dental Measurement: An Assessment of its Value in Anthropological Studies."* In: Dental Anthropology, by D. R. Brothwell (ed.) (Pergamon Press Oxford: UK, 1963) pp. 179-190.
[52] MacGregor, A. J., The Impacted Lower Wisdom Tooth (Oxford University Press, New York: 1985) p. 5.
[53] Kallay, J., *"A Radiographic Study of the Neanderthal Teeth from Krapina."* In: Dental Anthropology, by D. R. Brothwell (ed.) (Pergamon Press Oxford: UK, 1963).
[54] MacGregor, A. J., The Impacted Lower Wisdom Tooth (Oxford University Press, New York: 1985) p. 3.
[55] Mills, J. R. E., "Occlusion and Malocclusion of the Teeth of the Primates." In: Dental Anthropology, by D. R. Brothwell (ed.) (Pergamon Press Oxford: UK, 1963).
[56] Robinson, R. J. and Vasir, N. S., (1993) *"The Great Debate: Do Mandibular Third Molars Affect Incisor Crowding? A Review of Literature,"* Dental Update, 20(6):242-246.
[57] MacGregor, A. J., The Impacted Lower Wisdom Tooth (Oxford University Press, New York: 1985) p. 16.

Back to the beginning of my point, *"Many people suffered discomfort or died needlessly due to this philosophical assumption that evolution is true. You will see this assumption play out again and again where medical science and the evolutionary issue intersect."* and here again we find that a false assumption leads to unnecessary discomfort and even death.[58] [59] In an excellent study Dr. Southard concluded that *"crowding cannot be prevented simply by extracting unerupted third molars"*[60] and that *"removing these teeth for the exclusive purpose of relieving interdentally force and thereby preventing incisor crowding is unwarranted."*[61]

Numerous other studies support this conclusion. Samsudin and Mason[62] found, in their sample of 423 patients that were scheduled for wisdom teeth removal, that only 5% were assessed by the orthodontists as needing removal because of crowding. Nine out of ten American teenagers who have dental insurance lost their wisdom teeth![63] One report determined the cost of this operation may exceed that of most routine medical or dental procedures.[64] the previously mentioned study by Tulloch was part of an effort to identify ineffective or wasteful medical procedures concluded that:

> *"Universal extraction of wisdom teeth would cost more than $278 million and would result in three million days of misery for American teenagers…. Removing only problem teeth would cost an estimated %51.5 million and create 776,000 days of misery…. If surgeons removed only those wisdom teeth that actually caused problems… the nation would save at least $150 million a year in medical expenses with no ill effects. And tens of thousands of people, mostly teenagers, would be spared the aches, pains and complications that can result from surgery."*[65]

However, I fear, to accept anything other than the evolutionary view of the third molar would mean fewer Lexus' or Mercedes being driven by the orthodontist. Another example of evolutions twisted philosophical impact on societies health and wallet.

[58] Leff, M., (1993) *"Hold on to Your Wisdom Teeth,"* Consumer Reports on Health, 5(8):4-85.
[59] Marshall, D. A. S., Berry, C., and Brewer A., (1993) *"Fatal Dissemination Intravascular Coagulation Complicating Dental Extraction,"* British Journal of Oral and Maxillofacial Surgery, 31:178-179.
[60] Southard, T. E., (1992) *"Third Molars and Incisor Crowding: When Removal is Unwarranted,"* Journal of the American Dental Association, p. 76
[61] idid., p. 79
[62] Samsudin, A. R., and Mason, A. D., (1994) *"Symptoms from Impacted Wisdom Teeth,"* British Journal of Oral and Maxillofacial Surgery, 32(6):380-383.
[63] MacGregor, A. J., The Impacted Lower Wisdom Tooth (Oxford University Press, New York: 1985) p. 3.
[64] Tulloch, J. F., Antczak, A., and Wilkes, J., (1987) *"The Application of Decision Analysis to Evaluate the Need for Extraction of Asymptomatic Third Molars,"* Journal of Oral Maxillofacial Surgery, 5:855-863.
[65] ibid., p. 504.

If one wishes to further their knowledge of these issues, I suggest the following book:

- Vestigial Organs Are Fully Functional (Creation Research Society Books, Kansas City: MO: 1990). **Jerry Bergman** (co-author) Ph.D. is one of a few who has three earned doctorates (psychology, sociology, human biology, his fourth will be awarded soon - I am not sure in what field). **George F. Howe** (co-author) Ph.D Botany, and M.Sc. in botany from Ohio State University. He has done post-doctoral work in radiation biology, botany, and desert biology at Cornell, Washington State, and Arizona State Universities respectively. The forward is by **David Menton**, B.A. from Mankato State University in Mankato Minnesota. Ph.D. in cell biology from Brown University. Associate Professor of Anatomy at Washington University School of Medicine (now retired). Member of the American Association of Anatomists. Sigma Xi. Silver Award for Basic Research from the American Academy of Dermatology. Named "Teacher of the Year" in 1979 at Washington University School of Medicine. Coursemaster of Microscopic Anatomy at Washington University School of Medicine. Written numerous articles in technical and scientific journals dealing with the barrier function and biomechanics of skin. Associate Editor of "*Stedman's Medical Dictionary*," a standard medical reference work. The preface is by **V. Wright**, M.D., F. R. C. P. – Don't Ask!?