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Our next board meeting is set for 20-22 April 1995 at Chino Valley (Prescott) Arizona. All members and friends are invited to visit our new facilities at VARC during the year. They are also invited to attend our Friday night open meeting and mini-symposium. Further details on its location and time will be published in the March 1995 issue of *CRSQ*.

CompuServe Debates

Readers of the Quarterly may be interested in reviewing and perhaps contributing to the ongoing discussion about creation versus evolution on CompuServe. They may jump in by going to the Dinosaurs Forum and finding the first thread in the Dino/Controversy section entitled "Creationism." (Currently up to 215 messages.) My interest was triggered when someone asserted that evolution is science while creation is not.

Although I have been aware of the Creation Research Society for several years, I was finally prompted to join after participating in this very lively discussion. By way of testimony, my acceptance of the creation model actually preceded my salvation experience by some twelve years. I had a Christian biology teacher in high school who gave his class three weeks to research and decide for ourselves whether or not evolution was valid. He gave us an extensive resource list of articles and publications which came mostly from secular scientific journals of the day (early sixties). Twenty-seven out of twenty-eight students in his class came to the conclusion that evolution was scientifically invalid.

Again, I would invite any CRS members who are so inclined to participate in this debate and others similar to it. I would also invite any Email correspondents. I am more interested in mathematics, cosmology and nuclear physics than biology.

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THE WISDOM OF SAVING WISDOM TEETH

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Abstract

Evolutionary theory concludes that humans evolved from ape-like ancestors, and in the process the jaw became smaller, leaving less room for the third molars. This conclusion was a major factor in the common past dental practice to remove relatively healthy wisdom teeth during adolescence. Recent empirical research has concluded that this practice is unwise and often needless. Third molars in general should be left alone, and if a problem develops, they should be treated as any other teeth, and efforts to deal with the problem should be foremost.

Introduction

A major conclusion of evolution theory is that as humans evolved, our jaw has shrunk from its larger ape size to the smaller human size. In the process, the jaw became too small for our third molars, often called the wisdom teeth. This view was explained by Ebbert and Sangiorgio as follows:

> Once upon a time, our ancestors had larger jaws, so there was room in the human mouth for 32 permanent teeth, including third molars—wisdom teeth. But now our jaws are smaller. The result: There's no longer room in most of our mouths to house 32 teeth. So the last teeth we develop—our wisdom teeth—often become impacted, or blocked from erupting (1991, p. 108).

In the words of Liggett, as "primitive man learned to . . . break up his food with his hands . . . the jaw and brow ridge gradually became less prominent" (1974, p. 3). The third molars are often labeled vestigial organs, and offered as a major proof of human evolution from lower primates (Berra, 1990, p. 22; Harris and Weeks, 1973; Moore, 1962, p. 45). Consequently, the prevailing wisdom was

> the wisdom teeth, or third molars, are vestigial structures for which there is simply not enough room, . . . the wisdom tooth, like the appendix is a vestigial organ. People today have smaller jaws but as many teeth as their antecedents. The result is that, for most people, there is not enough room in the mouth for wisdom teeth; they have no function but to give trouble (Schissel, 1970, p. 50,170).

However, these teeth are hardly vestigial: they aid in chewing our food as do all of our other 28 teeth (Bergman and Howe, 1990). The erroneous conclusion has resulted in the extraction of literally billions of teeth which was largely unnecessary according to current studies (Leonard, 1992). In the words of Leff (1993, p. 84) "dentists extract millions of those third molars each year—in most cases needlessly"—and fully nine out of 10 American teenagers who have dental insurance lose them. The cumulative cost of this operation is estimated to exceed "that for any other surgery, medical or dental" (Tulloch and Antczak-Bouckoms, 1987, p. 855). Is this cost justified? In an extensive study of aberrant maxillary third molars, Taylor rejected the "hypothesis that great variability indicates a genetic trend towards elimination of this tooth from the human dentition" (1982, p. 65). This view was evidently first widely propounded by Darwin, who stated:

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> . . . the posterior molar or wisdom-teeth were tending to become rudimentary in the more civilised races of man. . . . They do not cut through the gums till about the seventeenth year, and I have been assured that they are much more liable to decay, and are earlier lost than the other teeth; but this is denied by some eminent dentists. They are also much more liable to vary, both in structure and in the period of their development, than the other teeth. In the Melanian races, on the other hand, the wisdom-teeth are usually furnished with three separate fangs, and are generally sound; they also differ from the other molars in size, less than in the Caucasian races. Prof. Schaaffhausen accounts for this difference between the races by "the posterior dental portion of the jaw being always "shortened" . . . I am informed by Mr. Brace that it is becoming quite a common practice in the United States to remove some of the molar teeth of children, as the jaw does not grow large enough for the perfect development of the normal number (1896, p. 20).

Although Darwin felt that our soft diets may influence lack of jaw development, many later evolutionists concluded the evolution of the human face from our ape-like ancestors was a far more critical reason for the current wisdom teeth problem.

A Result of This Belief

Tragically, many dentists routinely advise extraction of all wisdom teeth, regardless of whether they are causing problems—some even remove wisdom teeth during adolescence if it only *appears* that they *might* later become impacted (Leff, 1993, p. 84). McGuire even once advised, "In most cases you will want to have them pulled" (1972, p. 173). The reasons given for removal include the belief of many oral surgeons, orthodontists, and general dentists that wisdom teeth can push the other teeth forward, forcing the front ones to overlap—a theory based more upon the philosophical assumption of evolution than scientific research (Southard, 1992). As Leff concludes, "There is virtually no evidence" to support the claim that the wisdom teeth are usually the cause of front teeth crowding (1993, p. 85). Little and Riedel (1988) in a long-term study found that for several reasons the front teeth tend to drift forward at least into middle age, whether or not the wisdom teeth have been removed. Southard in an excellent study concluded that "crowding cannot be prevented simply by extracting unerupted third molars" (1992, p. 76) and that "removing these teeth for the exclusive purpose of relieving interdental force and thereby preventing incisor crowding is unwarranted" (1992, p. 79). This crowding does not usually occur because the jaw is evolutionarily smaller, and thus not enough room exists for the teeth, but for other reasons (Henschen, 1966; Southard et al., 1991).

Some individuals have very small jaws—which is an individual trait occurring because *all* human dimensions vary according to a normal curve, and those toward the smaller end of the curve may sometimes experience problems. These cases, though, are relatively few and are not the norm. The major problem according to Taylor is not jaw size, but maxillary sinus size: "There is great variability [in the 3rd molars] and . . . the tooth roots conform to the [maxillary] sinus, not vice versa. The sinus enlarges ahead of [molar] tooth root formation so that in a sense the sinus is dominant" (1982, p. 71).

The major problem resulting from removal of wisdom teeth, aside from the loss of these very useful molars, is the complication involved in tooth extractions. Problems that can result from removal include "infection and dry socket, trauma to the neurovascular bundle and temporary or permanent paresthesia or anesthesia of the lip, trauma to the lingual nerve, tongue numbness (temporary or permanent) root segments left in the socket and risk of damage to adjacent teeth" (Leonard, 1992, p. 82). One Michigan study found that more than 10 percent of all such operations cause complications which include inflammation of the tooth socket, infection, persistent bleeding and numbness of the lip and tongue (Leff, 1993, p. 85). Some of these problems were permanent. Extraction also has the potential of damaging the gums and causing bone loss which affects the support for the second molar.

Huggins concludes that a major reason why wisdom teeth should be left alone, if possible, is because even the best extraction technique leaves the tooth membrane in, and the top of the socket heals over "with skin and a few millimeters of bone—but down underneath is a hole" (1991, p. 44). Inside of this cavitation are frequently found autoimmune cells, monocytes and other indications of abnormalities which evidently can influence neurological problems because "when these cavities are cleaned out with a dental burr. . . patients with neurological problems sometimes experience a notable improvement within a few days or less" (1991, p. 44).

Numerous research studies have evaluated the total risks of surgery versus treating the problems sometimes encountered in wisdom teeth eruption. They have in general concluded that

> based on the results of several studies and the opinion of a panel of experts . . . doing nothing until problems developed would typically cause half as much discomfort and disability as extracting all impacted teeth, and only a fraction as much distress as pulling all wisdom teeth in adolescence (Leff, 1993, p. 85).

Leff further suggests that "if your dentist recommends extracting a symptom-free tooth—or recommends extraction for your teenager—ask him or her to show you the problem (not just the extraction itself) on the X-rays." He also recommends that, unless there is clear evidence that the only course of action is to remove the wisdom teeth, the patient should obtain a second opinion "from a dentist who does not specialize in surgery" (Leff, 1993, p. 85; see also Tulloch et al., 1987). He concludes that if extraction is not the only option, and if one leaves these teeth alone, there is "an excellent chance they'll never be a problem" (Leff, 1993, p. 85).

The wisdom teeth typically erupt from ages 17 to 25 or older. Only about 30 percent become seriously impacted, usually because they are pointed in the wrong direction when they come in and push against the second molar. Claims that they usually disrupt other teeth and can cause irreversible damage do not hold

up under the scrutiny of recent scientific studies (Southard, 1992). The risks posed by impaction are "far smaller than the proponents of early extraction claim" (Leff, 1993, p. 84). This conclusion is based on "scientific evidence about impacted wisdom teeth, including several large studies involving thousands of cases" (Leff, 1993, p. 84). Recent research strongly opposes removing wisdom teeth in an attempt to ease the crowding of other teeth. This conclusion is quite a contrast to the previous perception held by most dentists for decades "particularly oral surgeons" namely that wisdom teeth were "essentially useless troublemakers—'little time bombs,'" (Leff, 1993, p. 84).

Problems do occasionally exist with third molars that need to be attended to, such as one partially poking through the gum which can influence decay or gum disease of the adjacent molar. This concern can much better be dealt with by cleanliness, and removing the impacted teeth *only* if and when a problem develops that cannot be solved in a less drastic way. Actually, the number of cases where this is a problem is, at most, about seven percent. Infection can be a problem because bacteria accumulate beneath the gum flap still covering the tooth as it erupts. Local antiseptics and a trimming back the gum can most often effectively deal with this concern. Another problem is the possibility of cysts and tumors developing in the sack surrounding an impacted wisdom tooth. This abnormality, though, is relatively rare—fewer than one percent of all impacted third molars are surrounded by cysts (Mourshead, 1964). Further, as cyst development is generally extremely slow, this concern can be monitored and dealt with before it affects a significant amount of bone. Tumors are also rarely a problem—"roughly one in a million impacted wisdom teeth" in a study noted by Leff (1993, p. 84).

The Implications of This Research

The creationism world view is often criticized because it allegedly lacks predictive value. In the case of wisdom teeth, the assumption that the body was designed predicts that the wisdom teeth exist to serve a purpose and thus normally should be left alone. In harmony with this, if problems occur, they should be dealt with in similar ways as problems that occur with any other teeth. The evolutionary perspective, which taught that the human jaw has shrunk in the history of human evolution, would conclude that the wisdom teeth are generally problematic. Consequently, this perspective concludes it is often best that they are removed because the jaw has evolved so that it is generally too small for them. This view has dictated the dental policy for at least the past half century (Wood, 1978).

The empirical evidence now supports the creation position: the appearance of wisdom teeth are purposeully designed and are part of normal development, and consequently if one or more of them cause problems, they should be dealt with in the same way as any other tooth which causes problems—endeavor to save them (Tulloch et al., 1990). When the writer was in high school, one of his wisdom teeth became impacted, and only three developed. The dentist elected to remove all three because he believed that the human jaw now usually was too small for them, and that third molars should be removed even if they are not causing problems because they will often cause problems later (the so-called adolescent removal). The now outdated advice for generations was: "Early extraction of impacted wisdom teeth is often advocated because the procedure is much easier than in later years, when the bone becomes more dense. Also, the younger the patient the better the procedure will be tolerated" (Wood, 1978, p. 183).

This prophylactic therapy is now regarded as wholly incorrect (Tulloch et al., 1990), although the change has come about only because of empirical studies and the realization that in the majority of cases the jaw is not too small (which is clearly the case in the writer's situation—there was plenty of room there for not just four wisdom teeth, but possibly eight). Human variation is such that in a certain percent of cases, the jaw and/or maxillary shelf will be too small. This problem with variation is true of all other human traits as well. Consequently, people not uncommonly have trouble with other body parts for the same reason, but no one argues that alterations which may be necessary for a minority of the population should in general be utilized for everyone as a prophylactic measure (Leonard, 1992). This is only one of many examples in which evolutionary theory has drastically misled medical practice, and in this case resulted in the unnecessary removal of billions of teeth. A study by Tulloch et al. (1990) that is part of an effort to identify ineffective or wasteful medical procedures found that:

> Universal extraction of wisdom teeth would cost more than $278 million and would result in three million days of misery for America's 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 the surgery (Blakeslee, 1991, p. C9).

The Major Cause of Wisdom Tooth Impaction

One of the most extensive studies which attempted to determine specifically *why* wisdom teeth become impacted was done by Huggins on 22 cultures. He concluded that cultures, such as native American Indians which sleep their young children on their backs, develop "healthy teeth" and "crooked teeth and impacted wisdom teeth are uncommon" (Huggins, 1991, p. 44). Further, children who are tummy sleepers develop narrower faces with crowded teeth requiring orthodontic attention, and side sleepers develop crooked teeth and a tendency to develop crossbites in which the bottom molars overlap the top when biting down. The reason is these sleeping positions puts pressure on the thin membrane bones of the developing face, preventing them from developing properly. The six year study found that "back sleepers, however, had plenty of room for their teeth to develop, including space for wisdom teeth." Although other factors exist, by far the most important, Huggins concluded, was the long term sleeping position of persons during the development of their primary teeth. He also confirmed this in his own dental practice. Of course children whose sleeping

position varies may develop less severe crooked teeth, or teeth with a combination of the above problems. Huggins concludes "the obvious conclusion is to grow your wisdom teeth in straight. Eat right so they do not decay. Clean them and keep them." If this pioneering research proves to be correct, it would largely eliminate the need to remove wisdom teeth or straighten crooked teeth. Tragically, the evolutionary hypothesis may have delayed looking for the actual cause of the problem. The solution would have been facilitated by the belief that, given proper health and environmental conditions, wisdom teeth will come in normally.

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BOOK REVIEW

Inventing the Flat Earth Columbus and Modern Historians by Jeffrey Burton Russell. 1991. Praeger Publishers. 117 pages. $16.95.

Reviewed by Don B. DeYoung*

True or False: Christopher Columbus proved to a skeptical world that the earth was spherical instead of flat. Totally false, claims author Russell. In fact, no more people accepted a flat earth in 1492 than still do today. Russell gives an impressive number of quotes and references from medieval times to prove his point. He also reminds us that Eratosthenes had accurately measured the earth's circumference already in 200 BC. This data was *not* forgotten, as described in many school books. Instead, the "flat earth error," the idea that a flat earth was the popular medieval view, largely originated one hundred years ago.

Russell is a Professor of History at the University of California, Santa Barbara. He has traced the Columbus flat earth misconception to the influential writings of John W. Draper (1811-1882) and Andrew Dickson White (1832-1918). Both men believed that religion and science were at war (p. 37). They saw Christianity and creation in particular as obstacles that hindered science progress. (To his credit, Russell believes otherwise, suggesting that science could not have developed without the aiding hand of Christian theology, p. 46). Russell charges that Draper and White wrote that the Medieval Church accepted a flat earth, in spite of contrary evidence, to promote the religion-science warfare theme and also to disparage the Church. It succeeded.

The flat earth error is still promoted, perhaps most recently and widely in *The Discoverers* by Daniel Boorstin (1983) Boorstin, top Librarian of Congress for 13 years, wrote that the Church of Columbus' day attempted to force a flat earth upon everyone. Boorstin's chapter 13-14 titles, The Prison of Christian Dogma and A Flat Earth Returns, reveal his bias. Author Russell shows how Boorstin used recent, questionable sources instead of original writings in researching the matter (p. 48). Why does the belief that Columbus was nearly alone in supporting a spherical earth still continue today? Russell gives three reasons (p. 51): (1) The continuing Bible-science debate, where false ammunition is used against the early church. (2) A false assumption that medieval people were ignorant. There is a baseless chauvinism that makes the voyage of Columbus the dawn of a new day in a dark, unthinking world. (3) Along with Draper and White, other popular writers like Washington Irving (1783-1859) also promoted the flat earth error.

Hats off to author Russell for challenging revisionist history, and defending the integrity of the early church.

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