important hormones are triiodothyronine (T3) and thyroxine (T4), both of which regulate metabolism, and the hormone calcitonin, which helps to regulate calcium levels (Marieb and Hoehn, 2014, p. 534). Both T3 and T4 stimulate the mitochondria to provide more energy for the body and to increase protein synthesis.

Without T3 and T4, humans become sluggish, and normal growth and development are interrupted. An oversupply (or an undersupply) of thyroxin results in over-activity (or under-activity) of many organs. Developmental defects in this organ cause the hideous deformity known as cretinism that results in severe retardation of both physical and mental development (Levy et al., 1964, p. 663). After full body growth is achieved, the gland's functions are less critical, and can partly be compensated for by other organs.

Conclusion

The thyroid gland was at one time considered to be a vestigial organ. Inspired by his religious upbringing, Dr. Kocher conducted the investigations which led to the discovery that this gland is, in fact, essential for normal human development. This is one of many examples where the application of the creation principle in Genesis has motivated scientific advances.

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Pre-Biological Fitness — *The Water Cycle*

by Michael G. Windheuser, Ph.D.

The western shore of the island of Hawaii has the perfect conditions for growing coffee. Overnight hours are clear and cool on the slopes of Mauna Kea. Daylight brings the radiant heat of the sun which warms the upper layer of the ocean and causes evaporation during the day. The warm moist air is swept upwards from the coast, cooling and condensing first as clouds, and then falling as a gentle rain on coffee plantations below. The water eventually finds its way through the volcanic soil back to the ocean, and the cycle begins again. This daily water cycle is a small picture of the global water cycle which happens each day.

Water makes our planet habitable and life possible. It does so through many unique properties, one of which is its ability to both absorb and dispense heat energy. The water, or hydrologic, cycle is one key way that heat is moved from warm climates to colder ones, helping to maintain worldwide temperatures within the small range suitable for life (Wiker and Witt, 2006). It takes a large amount of energy to raise the temperature of water by one degree. This is energy that would otherwise be warming the environment, but is captured by water.

In addition, it takes an extraordinary amount of energy to cause water to vaporize or change from liquid to a gas. Just as perspiration cools our skin by evaporation, the evaporation from the world's oceans absorbs a tremendous amount of heat, which is subsequently carried to colder latitudes or higher altitudes where the water vapor condenses into liquid water. As water vapor condenses, it releases the same amount of heat it absorbed during evaporation. This warms up colder climates. Something similar happens when water freezes and thaws. Melting ice absorbs a huge amount of heat energy which is subsequently released when liquid water freezes.

Water is the perfect compound to absorb, store, circulate, and dispense heat on a worldwide basis. With 70% of the Earth covered with water, the moderating effects of water on local and worldwide climate can't be overstated. But these physical-chemical properties are what Wiker and Witt (2006) call "*pre-biological*" properties. That is, these abilities of water were present before life, yet are perfectly suited to support life on Earth — from the microscopic to the worldwide scale. Wiker and Witt (2006) see water as a thing of genius, consisting of only two elements and possessing "all the needed powers that complex and even intelligent life demand."

The water cycle is only one aspect of a range of powers resident within water, which powerfully reveal how the natural world was created with the *intent* to support intelligent life. Since by definition natural selection requires a living organism capable of leaving offspring which may or may not survive, and water is part of the non-living world, it cannot be natural selection that is responsible for the properties of water. Rather, this type of pre-biological fitness for life means that the Creator of the earth and the universe had us in mind from the very beginning.

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