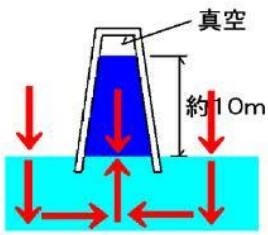
10m 以上の木の不思議：The Wonder of Trees 10 m Tall and Over

Quoted from 2011/06/23rd：http://pub.ne.jp/MPEC/

■写真は、６月 18 日(土)に撮影した「新井高校前のメタセコイア」です。銀杏(いちょう)と同様、生きた化石だそうですね。(でも、広辞苑によると、1945 年に中国の四川省で、現生種、アケボノスギが発見されました。)

This picture: "Metasequoias in front of Arai Senior High School" was shot on Saturday, June 18th. They are said one of "A Living Fossil" as well as ginkgos. (However, according to *Kojien*, a Japanese-language dictionary, a dawn redwood was found at Sichuan in China as one of modern species in 1945.)



■Yoshy が新井高校で学んでいた当時、「生物」の佐久間先生が、「大気圧の所為で、水は 10m 以上吸い上げることは不可能なのに、10m 以上の木々があるのはなぜか？謎です。」をはっきり覚えています。エリー(愛犬)との散歩の折り、このメタセコイアを見るたび、気になっていました。

When Yoshy was a student of Arai S. H. School, Mr. Sakuma who was a teacher of "Biology" said to us that "Owing to the pressure of the atmosphere, water cannot rise over 10 meters. I wonder why trees over 10 meters and over exist." Yoshy remembers that very clearly. While walking with Erie (his pet dog), those metasequoias have reminded him of this question.

■６月 22 日(水)、J 大の T 教授にメールで質問したところ、今日(木)の朝、ご回答を頂きました。ありがとうございました。以下、ご回答の骨子です。

As soon as Yoshy sent this question to Prof. T in J. University by email on Wednesday, June 22nd, he was kind enough to give me his good answer this morning (Thursday). Thank you very much, sir! The gist is as follows. …

■パスカルの原理では、10m の限界は引き上げたところで下に真空ができるからです。植物の場合は細胞がつながっているので次々とつないで引き上げているんでしょう。一つの細胞が 10m 以上もあるならば一気に吸い上げるのは無理ということです。

"Pascal's Theorem" says that if water were lifted up over 10 meters, vacuum would appear in the bottom. In case of plants, linked cells must help themselves suck up water from one cell to another. I. e, if one cell were 10 meters and over, it couldn't suck up water at a breath.