

Aw Hell (Giants)

The Urth list — 4 messages, 4 voices, 15 Oct 1999

<https://urth.darkrealm.vip/thread/urth/1835>

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Jim Henley — 15 Oct 1999, 23:29

I was talking giants and the Square-Cube Law last night with my Amber (RPG) group and offered the oh-so-clever observation that one could get around it by living, giant-sized in the water, oh yes I did. But one of my pals said the real problem with the SCL is in the lungs - you pass a point where the surface area of your enlarged lungs can't absorb enough oxygen for all the cells in your enlarged body.

Well darn! But I wonder; we didn't get into the math - I mean, Bill's from art school - but can anyone put a number on the size where lung limitations come into play?

I can't help remembering the old Ben Bova science columns that ran in Boy's Life back in my scouting days. (This was more than, oh, ten years ago. And I do mean "more.") One month, by way of teaching the SCL, he set out to design a giant crab. By the end of the article, after all the compromises and efficiencies were accounted for, the "giant crab" turned out to be - Tyrannosaurus Rex!

Best,

Jim

"Took my pistol and a hundred dollar bill
I had everything I needed to get me killed"
-- Steve Earle

Fr.Inire — 15 Oct 1999, 21:58 · follows Jim Henley

--- Jim Henley <jlhenley at erols.com> wrote:
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night with my Amber (RPG)
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cells in your enlarged body.

aw, tell him to bugger off and go appreciate some
existential<sp> impressionism...;-> Actually, doesn't
that naively assume that the lung capacity isn't also
increased by the evolution of greater numbers of
alevoli <sp> sucking up O2? That would seem to follow
if the rest of the body has evolved such that water as

the only means of support...

=====

Jeff "My dice hate me!" Miller

The HeavyGear Parts SwapMeet is at <http://freecenter.digiweb.com/games/severian/swap.html>
Heavy Gear: Not your Dad's walking robot game...www.dp9.com

Gaming to keep War out of RealTime! '82 GS650G

Ron Hale-Evans — 16 Oct 1999, 01:01 · follows Fr.Inire

Jim Henley wrote:

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Omigoodness.

Whenever I hear anyone mention the square-cube law, this very article leaps instantly into my mind. I had no idea it was by Ben Bova (what did I know from Bovas at that age?). And I have always recalled it as an insect he was scaling up.

But no matter. A Scout is trustworthy, loyal, brave...

Thanks for confirming this memory.

Ron H-E

Ron Hale-Evans: [rwhe at apocalypse.org](mailto:rwhe@apocalypse.org) ... <http://www.apocalypse.org/~rwhe/>>
Center for Ludic Synergy: <http://www.ludism.org/>>
Kennexions GBG artgame: <http://kennexions.ludism.org/>>
Hexagram-8 I Ching Mailing List: <http://www.apocalypse.org/~rwhe/hex8.html>>
Positive Revolution FAQ: <http://www.ludism.org/posrev/>>

Jon Camfield — 17 Oct 1999, 11:49 · follows Ron Hale-Evans

aw, tell him to bugger off and go appreciate some existential<sp> impressionism...;-> Actually, doesn't that naively assume that the lung capacity isn't also increased by the evolution of greater numbers of alevoli <sp> sucking up O2?

The problem is that the ability to get oxygen from the air (or the water, for that matter) is based on amount surface, so it scales much slower than volume (volume scales in cubes, surface area in squares).

OTOH, we have seen giants such as the sperm whale and the brontosaurus rex alive and well on earth--so the undines are certainly within reach size-wize (I'd give them T. Rex-level proportions from what I remember--anyone have better estimates?).

And, who said Abaia breathes, in the first place?

Also, as Ron pointed out, it may be entirely possible that some other method has evolved--smaller alevoli (diminishing returns as the space between cells approaches the size of O₂), bigger, more expansive lungs/gills, etc. etc. etc.

Jon "GriffJon" Camfield www.GriffJon.com

Web R&D, Competitive Intelligence; eCertain.com

"A human being should be able to change a diaper, plan an invasion, butcher a hog, construct a ship, design a building, write a sonnet, balance accounts, build a wall, set a bone, comfort the dying, take orders, give orders, cooperate, act alone, solve equations, analyze a new problem, pitch manure, program a computer, cook a tasty meal, fight efficiently, and die gallantly. Specialization is for insects."

--Robert A. Heinlein, *The Notebooks of Lazarus Long*