Besides ~~that~~ it is not much use talking about Elec. until one is clear on elementary hydrostatics

I fear you will not like being bothered with so elementary a matter, but out of your good nature please spare me a few moments to shew me where I most amend my ways & modes of thought.

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Yours sincerely

Oliver J. Lodge

What on earth does one want with "cavities" & "vacuons" or other. Why should he be content to say unit charge near a conductor when it is so easy to put it in - so difficult in fact not to.

I dont suppose any diff of pot between metal & vacuum, but I dont know anything about it & didnt think I cared for that purpose.

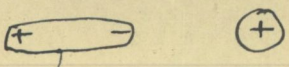
The pot of the metal may great well mean the pot of the metal itself. may it not?

in to the vessel at that place — not to bring it near to the vessel only.

The Potential of the vessel is uniform & is the pot energy of any pound of water in it. I recognise no such thing a pressure-energy

Pressure is what is commonly called 'head' & is determined by the level of the free surface.

Still this is what I should have said



To put a dielectric case

Consider a conductor under induction (& allow the old action-at-a-distance mode of expression, pro tem) I should say that the cylinder is all at one potential its own charge being so distributed as to produce this result under the action of the discharging sphere.

You would say (I now suppose) that the different parts of the cylinder are at different potentials because of ~~but the equilibrium~~ is maintained by the repellent action of the sphere's charge acting at every point. Practically however you will disdain any action at a distance expression & will evade this by the dielectric, as of course you can.

True all part of water have the same total energy but this energy is in 2 part potential energy & pressure energy.

The potential of said pound of water is that due to its own level ~~not~~ i.e. the work done in lifting it up to that level (without putting it into the vessel against the pressure of the superincumbent water) & is not the head of water or level of its free surface.

This is not I understand you to say.

I should have said (quite innocently thinking I was orthodox, except for Mr Besant his equipot surfaces, which are constant pressure surfaces really)

the potential of water in a vessel must be constant or water would flow. True the different layers are at different levels & not gravitation acts so as to exactly equalise the potential. The potential at any place ~~is the work needed~~ in the vessel is the work needed done to raise 1lb of water from the sea & put it

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Bryn Afon Bettws y Coed
N. Wales

16. April 85

My dear Fitz Gerald

We are talking of different things & are not using the same definition of potential. The difference is best settled in simple hydrostatics.

I am very sorry that my anxiety to agree with you made me jump to the conclusion that it was all right too soon. I have a decided notion that whatever you hold to is likely to turn out true. & I am most anxious to learn, if you will spare a few moments. [at least so I now suppose]

You would say (& so would Besant - only he's nobody - & so would Perry) grav[l] potential means level - gh - whether in empty space or in a vessel of water.

all parts of water at rest in a vessel are not at one potential; & the only reason that the water is, does not at once flow so as to equalise the potential is that there is an [illegible] acting on every particle of water which maintains equilibrium notwithstanding the difference of potential.