tically downward, and the centrifugal force, acting horizontally. . . . The resultant is found by the parallelogram law. Its direction must be normal to the surface of the liquid." Had this author, and our American authors, been careful to draw the distinction between applied and reactive forces, they could not easily have fallen into the error of combining an applied force with a reactive force and obtaining—what kind of a force? Whatever the kind, it can not be an applied force; for if it were, it should, according to the second law, produce an acceleration in its own direction. But such an acceleration, as pointed out by Dr. Fulcher, does not here exist.

There are many other fundamental questions in physics about the best method of presentation of which we are not agreed. Teachers of college physics should welcome the opportunity of discussing them, and by so doing, clearing up their own ideas about them. Perhaps, also a thoroughly satisfactory text might thereby be evolved.

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QUOTATIONS

ROYAL SOCIETY FELLOWSHIPS

A QUESTION of more than ordinary interest and importance is involved in the opposition of a majority of the Fellows of the Royal Society to a proposal of its council to amend the statute of the society governing the election of fellows. On June 7 a special general meeting of the Royal Society was held, as the result of a petition to the council, to consider a proposal by the latter embodied last year in their report for 1916. It was to amend Statute XII. by empowering the council to recommend for election (*a*) privy councillors "whose election would assist the work of the society"; and (*b*) "men distinguished in the scientific or educational service of the state, or by their services to science and its applications." The opposition to this proposal, led by Sir David Bruce and Sir E. Ray Lankester, had been energetically whipped up among the unofficial fellows since last November, and there was an unusually large attendance at the meeting. The result was that a vote was taken, adverse by a considerable majority to the council. The following resolution was carried: "That this meeting is of opinion that the council will serve the best interests of the society by restoring Statute XII. to the form it had before the change made in it by the council on November 2, 1916, and by postponing further consideration of the statute relating to the election of fellows until after the termination of the war." The precise effect of the action thus taken by a majority of the fellows is for the moment rather uncertain, and the position is a somewhat embarrassing one for the president and council, who have thus suffered an apparent rebuff. According to the constitution of the Royal Society, the power of making and amending its statutes resides solely in the council, so that, strictly, the resolution is a *brutum fulmen*. On the other hand, the actual election of fellows rests with the society, and the council can only recommend candidates. So that the council is hardly likely to provoke an unseemly opposition to candidates it might recommend for election under the amended statute—even if it declines to stultify itself by "restoring" the *status quo ante* as suggested—by flying in the face of the adverse vote.

We understand that the president and council were, in fact, quite ready to meet the opposition raised within the society so far as concerns a postponement of any action on the amended statute till after the war. And in the comment we propose to make we can not, partly for that reason, express our entire disagreement with the opposition too strongly at this juncture. At the same time we think it desirable to say at once that we think the hostility of so many fellows to a proposal intended to increase the prestige and the value of the Royal Society distinctly regrettable. It was based, we are well aware—at any rate among some of the more eminent fellows who led the opposition—largely on suspicions of the introduction of state patronage into scientific research. But we have no doubt also that the influence of "vested interests" in the existing system of election to the coveted distinction of

F.R.S. has been even more potent in securing the majority against the proposal of the council. What we are quite certain about is that for a long time past the elections to the fellowship of the Royal Society have (largely through this influence of "vested interests") got far too much into a groove. The honor of being labelled F.R.S. has gradually come to be regarded more and more simply as a higher "degree" added to the academic distinctions of men who have passed through the regular scientific "mill" and have contributed a certain number of papers to the *Transactions*. The result is that the Royal Society is not as fully representative as it ought to be of the genius of the country, to which, as in earlier days, its fellowship should be extended. This is particularly true of "men distinguished in the scientific or educational service of the state," the importance and originality of whose work for the nation have secured much more adequate appreciation in consequence of the light thrown on it during war-time. A more elastic procedure in the recommendations to fellowships has for some time past been seen to be called for by the wisest heads in the society, and the proposal of the council was the outcome. We hope that it will still be pushed, with more persuasive effect, even though for the moment nothing further is done.

NOTES ON CANADIAN STRATIGRAPHY AND PALEONTOLOGY

CORDILLERAN PROVINCE

Graham Island.—The Queen Charlotte Islands form part of the outer, largely submerged ranges of the northwestern Cordillera and are generally considered to be the northern continuation of the Vancouver Range. Graham Island is the largest and one of the most northerly of the group. Its geology is the subject of a memoir by MacKenzie.[1] The oldest rocks exposed on the island belong to the Vancover group and are divided into two formations, the Maude and the Yakoun. The former consists of argillites, sandstones, and tuffs; it contains a marine fauna of early Jurassic age and at two localities in the lower beds are "probably Upper Triassic" forms. The Maude formation contains a large amount of pyroclastic material in its upper portion and grades upward into the Yakoun volcanic agglomerate, composed of rather massive water-laid beds. Its marine fauna, largely pelecypods and ammonites, suggests correlation with Middle Jurassic sandstones in Alaska. Both formations are moderately metamorphosed and considerably disturbed by folds and faults. They are cut by batholithic intrusions which may be correlated with the Upper Jurassic Coast Range batholith. The orogenic movements causing the deformation of the Vancouver group manifested themselves as compressive stresses acting in a direction north 60° east and were concomitant with these intrusions.

Erosion during Comanchean time reduced the mountain ranges thus formed to a subdued topography which was buried beneath the Queen Charlotte series in the Cretaceous period. That series consists of the Haida sandstones and coal-bearing shales, the Honna conglomerates and sandstones, and the Skidegate sandstones and shales, named in ascending order. It is probable that the Queen Charlotte series was formed in estuarine basins by the sudden influx of a large amount of sediment carried in by rapid streams, and that the series as a whole represents a delta deposit reassorted and modified by the waves and currents of a shallow sea. During the Laramide revolution the rocks of this district were slightly folded and upraised; dacite and andesite dikes and sills were extensively injected. Following this uplift, the Cretaceous sediments were largely stripped from the underlying rocks, remaining only in synclinal basins.

Shallow-water sediments forming the Skonun formation were deposited during the Miocene period. Sedimentation was cut short by the resumption of volcanic activity on a tremendous scale, by which the Masset formation was built up. This vulcanism is best placed in the early or mid-Pliocene, and the close of this epoch was marked by a recur-

[1] J. D. MacKenzie, "Geology of Graham Island, B. C.," Geol. Surv., Canada, Mem. 88, 1916.