transmission held by nearly all the early investigators) and very poorly with the hypothesis of initial, extranervous invasion. The generalized lymphoid hyperplasia found post-mortem is a secondary phenomenon. The subject will be dealt with at length in a paper which has just been submitted for publication in a medical journal.

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THE NON-IDENTITY OF "PURE" AND "ISOELECTRIC" GELATINS

IN a recent text on biochemistry one of the writers (R. J. W.) made the statement, which is contrary to J. Loeb's conceptions, that "pure" and "isoelectric" gelatin are not identical. The validity of this statement and the clarity of the argument has been questioned, probably due primarily to the fact that no experimental confirmation was cited.

We have within the past year actually performed experimental work which seems to check this conclusion, and are therefore presenting it briefly at this time. The theoretical basis for the case must first be summed up.

If we possessed an organic ampholyte which by its chemical nature was exactly neutral in character, a solution containing nothing but this pure ampholyte and water would obviously be neutral in reaction and furthermore would be at its isoelectric point because the tendency to ionize as an acid and as a base would be exactly balanced.

If, however, we were to dissolve in pure water an ampholyte which is slightly more of an acid than a base, the solution would be slightly acid instead of neutral, and the material would *not* be at its isoelectric point, because by nature it ionizes more readily as $H^+ X^=$ than as $Y^+ OH^=$. In an electric field the substance should migrate to the anode because of this unbalanced tendency to ionize in the two ways. In order to bring such a solution to the isoelectric point of the ampholyte, one would have to add a small amount of acid to the solution. This would repress the acidic ionization of the ampholyte and increase its basic ionization.

Gelatin is, by any process of reasoning, a slightly acidic substance (or mixture of such substances). In its make-up there is a preponderance of acidic amino acids, and when amino acids are combined in the peptide linkage the resulting products are more strongly acidic than the original amino acids. Gelatin belongs, therefore, to the latter type mentioned above. A solution of "pure" gelatin would not be neutral and would likewise not be at the isoelectric point of the gelatin. A slight amount of acid would have to be added to bring it to this point.

Experimentally, we prepared three batches of electrodialyzed gelatin. These were washed with acetic acid and electrodialyzed according to the method used by one of us (L. F.) in previous studies on gelatin. The samples obtained yielded from 0.011 per cent. to 0.014 per cent. ash, which values are about one eighth as high as those of Loeb's "ash free" gelatin.

In three separate runs 0.5 per cent solutions of samples of electrodialyzed gelatin were subjected to from 4,600 to 5,100 volts potential in a two-compartment cell for from 70 to 90 minutes. The pH values of the original solutions in each of the cases were 5.2, 5.21 and 5.14. After subjecting the solutions to electrolysis, migration of the gelatin was noted in every case. The gelatin content of the anode portion after electrolysis was increased from 11 per cent. to 92 per cent. in the different experiments.

In another experiment a 5 per cent. solution of electrodialyzed gelatin with a pH value of 5.0 was electrolyzed in a similar manner. There was a 13.7 per cent. increase in the gelatin content of the anode compartment after electrolysis.

When one drop of normal HCl was added to a portion of the original 5 per cent. solution, the pH value was decreased to 4.52. Electrolysis of this acidified solution for 75 minutes resulted in a reversal of migration. There was a slight *decrease* in gelatin content of the anode portion, namely 2.3 per cent. This was expected, since the gelatin solution had been brought slightly to the acid side of the isoelectric point of the gelatin.

In summary we may state that when a solution containing electrodialyzed, non-ionogenic, "pure" gelatin was electrolyzed, a marked migration to the anode was noted. This appears to bear out the statement that "pure" gelatin and isoelectric gelatin are not identical. A similar statement applies to most other proteins as well as amino acids.

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AIR FILTRATION IN BACTERIOLOGICAL LABORATORIES

ONE of the conspicuous results of building operations near our laboratory during the past two years has been the increased amount of dust in the air. Laboratory tables and equipment accumulate a layer of dust if the windows are opened for any considerable time during the day. Some of the time the dirt even sifts in with the windows closed. This, coupled with the close proximity of the power house, has caused much extra work of wiping up the dust and sterilizing the table with mercuric chloride-alcohol solution. Extra care in manipulations has been nec-