

# CONTENTS

	PAGE
PREFACE . . . . .	
I. ON THE MOVEMENT OF SMALL PARTICLES SUSPENDED IN A STATIONARY LIQUID DEMANDED BY THE MOLECULAR-KINETIC THEORY OF HEAT . . . . .	1
§ 1. On the Osmotic Pressure to be Ascribed to the Suspended Particles . . . . .	2
§ 2. The Osmotic Pressure from the Standpoint of the Molecular-kinetic Theory of Heat . . . . .	4
§ 3. Theory of the Diffusion of Small Spheres in Suspension . . . . .	9
§ 4. On the Irregular Movement of Particles Suspended in a Liquid and the Relation of this to Diffusion . . . . .	12
§ 5. Formula for the Mean Displacement of Suspended Particles. A New Method of Determining the Real Size of the Atom . . . . .	17
II. ON THE THEORY OF THE BROWNIAN MOVEMENT	19
§ 1. On a Case of Thermodynamic Equilibrium	21
§ 2. Examples of Application of the Equation obtained in § 1 . . . . .	24
§ 3. On the Changes in the Parameter $\alpha$ brought about by the Thermal Motion . . . . .	28

# THEORY OF BROWNIAN MOVEMENT

	PAGE
§ 4. Application of the Equation derived, to the Brownian Motion . . . . .	31
§ 5. On the Limits of Application of the Formula for $\sqrt{\Delta^2}$ . . . . .	34
<b>III. A NEW DETERMINATION OF MOLECULAR DI- MENSIONS . . . . .</b>	<b>36</b>
§ 1. On the Effect on the Motion of a Liquid of a very small Sphere Suspended in it . . . . .	37
§ 2. Calculation of the Viscosity-coefficient of a Liquid in which a large number of small Spheres are Suspended in Irregular Dis- tribution . . . . .	49
§ 3. On the Volume of a Dissolved Substance of Molecular Volume large in Comparison with that of the Solvent . . . . .	54
§ 4. On the Diffusion of an Undissociated Sub- stance in Solution in a Liquid . . . . .	56
§ 5. Determination of Molecular Dimensions with the help of the Relations already obtained . . . . .	60
<b>IV. THEORETICAL OBSERVATIONS ON THE BROWNIAN MOTION . . . . .</b>	<b>63</b>
<b>V. ELEMENTARY THEORY OF THE BROWNIAN MO- TION . . . . .</b>	<b>68</b>
§ 1. Diffusion and Osmotic Pressure . . . . .	69
§ 2. Diffusion and Irregular Motion of the Mole- cules . . . . .	76
§ 3. Movement of Single Molecules : Brownian Motion . . . . .	81
<b>NOTES . . . . .</b>	<b>86</b>
<b>INDEX . . . . .</b>	<b>120</b>