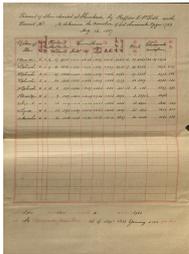
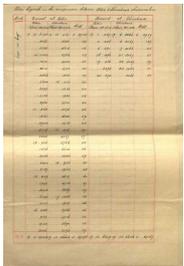


Summary of
“Report of the American Eclipse Expedition to Japan, 1887. Part I”

P A R T I	Section I. Report of the Chief of the Expedition*¹	
	Subsection	Materials Inserted
	<u>Introductory</u> ^{*2} <ul style="list-style-type: none"> • Funds. • Instruments. • Acknowledgements to instrument owners, Minister Kuki and the U.S. Department of State. 	
	<u>Choice of Station</u>	(Table 4-3)
	<u>Location of the Station</u> <ul style="list-style-type: none"> • Occupation of the Shirakawa Castle ruins, 374.9 m above sea level. • Arrangements of major instruments and other apparatus. 	(1) ^{*3} <i>Shirakawa, Iwaki, Japan.</i> A topographic map provided by the Bureau of Survey, Ministry of War. (2) Illustration of the equipment arrangements in <i>Frank Leslie's Popular Monthly</i> . (Figure 4-15). 
	<u>The Photoheliograph</u>	(3) Illustration of the photographic house's interior (unidentified as yet in <i>The David Peck Todd Papers</i>). (Table 4-4).
	<u>Interior of the Photographic House</u> <ul style="list-style-type: none"> • Devices to remotely control the heliostat. • Arrangements for manipulating the slide and shutter with codes (for the partial phase). • Arrangements of the lamp to make the plumb line visible. 	(4) System plan for remotely controlling the heliostat, drawn by J. Pemberton. (Figure 4-16).
	<u>Observations for Time</u> <ul style="list-style-type: none"> • Instrument used: Prismatic transit No.15. 	(5) Report entitled <i>Transit of stars observed at Shirakawa station by Prof. D. P. Todd, with the prismatic transit No.15 to determine the correction of Sid. Chronometer Negus 1722</i> (observed by Prof. Todd and recorded by M. Nakagawa / M. Shirai, Naval Observatory, Tokyo). (Aug. 10, 11, 12, 16). 
<u>Exchange of Longitude-Signals with Tokio</u> ^{*4} <ul style="list-style-type: none"> • Three nights successful. • Same stars were observed at both stations. • Same nights were used in the reductions. • Naval Observatory (Tokyo): Meridian circle (Repsold), Sidereal chronometer (Negus 1613). • Prof. Todd (Shirakawa): Prismatic transit No. 15., Sidereal chronometer (Negus 1722). 	(6) Report entitled <i>Time Signals in the comparison between Tokio and Shirakawa chronometers</i> (compiled by the Naval Observatory, Tokyo). (Aug. 10, 11, 12). 	

		<p>(7) Longitude results (provided by the Naval Observatory, Tokyo).</p> <p>Longitude in time for Tokyo = 9^h 18^m 58^s.02 E. of Greenwich</p> <p>Mean difference in Longitude = 1^m 52^s.305 E. of Tokio</p> <p>Longitude in time for Shirakawa = 9^h 20^m 50^s.325 E of Greenwich</p> <p>Longitude of Shirakawa = 140°12' 34".875 E</p> 
	<p><u>The Eclipse</u></p> <ul style="list-style-type: none"> • Predicted contact times (Shirakawa mean time). <ul style="list-style-type: none"> I. 2h 36m 39s II. 3 46 15 III. 3 49 23 IV. 4 51 54 • Clouds entirely obscured the sun during the first half hour of the eclipse. • Some exposures were made when the sun was half covered by the moon. 	<p>(8) Photographs of partial phase (unidentified as yet in <i>The David Peck Todd Papers</i> or <i>The Todd-Bingham Picture Collection</i>).</p>
	<p><u>General Phenomena of the Eclipse</u> Noted by Dr. Holland (from the time of first contact to 16:04).</p>	
	<p><u>Photographic Operations</u></p> <ul style="list-style-type: none"> • Attempts to treat the wet plates with preservatives to facilitate rapid handling (by Prof. Hitchcock and K. Ogawa). Plain sugar solution was adopted. Exposed to sunlight, filtered, and acidified with nitric acid. <p>Sugar 1 oz. Water 5 oz. Silver bath 5 oz.</p> <p>Freshly sensitized plates were immersed in the solution for about one minute, then transferred to the box which maintained a moist atmosphere.</p>	
	<p><u>Simple Duration of Totality</u></p> <ul style="list-style-type: none"> • 100 copies of instructions were distributed to the observation points. • Collected data were tabulated by the Japanese government. 	<p>(9) <i>Observed duration of totality, during Total Eclipse of the Sun, August 19, 1887.</i> (Appendix II).</p> <ul style="list-style-type: none"> • <i>Observations near the southern limit of the shadow path.</i> • <i>Observations near the northern limit of the shadow path.</i> <p>(10) <i>“Sketch; Showing the observed places of duration of totality near the Srn & Nrn limits of shadow path”</i> (a map provided by I. Arai). (Appendix II).</p>
	<p><u>Sketches of the Corona</u></p> <ul style="list-style-type: none"> • 150 copies of instructions were distributed to the observation points. • 75 sketches with high degree of excellence 	<p>(11) A photographic composite (albumen print; unidentified as yet in <i>The David Peck Todd Papers</i> or <i>The Todd-Bingham Picture Collection</i>).</p> <p>(12) List of the names of sketchers (unidentified as yet in</p>

	<p>were sent to Prof. Todd.</p> <ul style="list-style-type: none"> • These were (1) classified, (2) combined into <u>(vacant)</u> hand composites, then (3) combined into a photographic composite. 	<p><i>The David Peck Todd Papers or The Todd-Bingham Picture Collection</i>).</p>
	<p><u>Meteorological Observations</u></p>	<p>(13) <i>Meteorological Observations at the Shirakawa Station</i> by M. Nakagawa and N. Shirai. (April 18–20, 1887). (Appendix No. <u>(vacant)</u>).</p> <p>(14) <i>Meteorological Observations at the Naval Observatory</i>. (April 19). (Appendix No. <u> </u>).</p> <p>(15) <i>General Meteorological Journal</i> by Mrs. Todd. (July 22–Aug. 21). (Appendix No. <u> </u>).</p> <p>(16) “<i>Meteorological Journal</i>” by Lt. Southerland. (Appendix No. <u> </u>).</p> <p>(17) <i>Meteorology (extracted from the log of SS Victor, on Prof. Todd’s return voyage from Japan</i>. (Appendix No. <u> </u>).</p>
	<p><u>Temperature of the Water of the North Pacific</u></p>	<p>(18) <i>Surface temperature in the North Pacific Ocean, during the voyage from British Columbia to Japan.</i>” (June 23–July 7, 1887). (Appendix No. <u> </u>).</p> <p>(19) <i>Verification of United States Coast Survey Thermometer used in taking surface-temperatures in Pacific Ocean. Test made at Imperial Central Meteorological Observatory, Tokyo.</i> (Sept. 1, 1887).</p> <p>(20) <i>Extract from the log of the Abyssinia in her first two trips across the Pacific.</i> (May 31–June 14, 1887).</p> <p>(21) <i>Temperatures of the water in the North Pacific Ocean, during the first voyage of Abyssinia from Japan to British Columbia.</i> (May 31–June 14, 1887).</p> <p>(22) <i>Extract from the log of the SS Abyssinia, Captain Alexander Marshall.</i> (June 24–July 7, 1887). (Appendix No. <u> </u>).</p> <p>(23) <i>Temperature of the water in the North Pacific Ocean, during the first voyage of Abyssinia from British Columbia to Japan.</i> (June 24–July 7, 1887). (Appendix No. <u> </u>).</p>
	<p>Appendix: (13)–(23)</p>	
	<p>Section II. Report of W. J. Holland, Ph.D., D.D., Naturalist of the Expedition.</p>	
	<p>His report was directly sent to Prof. Newcomb. No copy exists in <i>The David Peck Todd Papers</i>.</p>	
PART II	<p>Report of the Entomological Research in Japan by W. J. Holland, Ph.D., D.D. (to be published a year or more later).</p>	

*1 Original section title.

*2 Original subsection titles.

*3 (1), (2), (4)–(8), (10), (11), (13)–(23) were materials photoduplicated and inserted into the report.
Most of the originals remain in “The David Peck Todd Papers.”

*4 Former notation for Tokyo.