

**Nebular Hypothesis Supported.**

BY PROF. GARRET P. SERVISS.

Astronomy commands the imagination of both the learned and the unlearned as no other branch of science does, and some of its recent advances appeal with particular force to the inquiring mind, which, conscious of superiority to merely terrestrial and temporal things, reaches continually toward the infinite and the eternal realities that alone can satisfy it. Among these advances one of the most remarkable is due to the discoveries made at the Lick Observatory with the great Crossley reflecting telescope, which is devoted to photographing celestial objects.

Especially among those mysterious and wonderful clouds of faintly glowing gasses called "nebulae" has this telescope proved its exceptional power. Vast spirals, immense gulfs of blackness surrounded by luminous walls, intricate patterns of luminous nebulous traceries as delicate in structure as the finest lacework and beaded with stars, interlinked rings of light, gleaming like the phosphorescence of the sea, but each so stupendous in circuit that the whole solar system and many other solar systems together might be embraced by it; orbs of pale fire, whose gigantic, whirling motion, and whose gradual compaction into new suns under the pressure of gravitation, are all but visible—such are some of the marvelous shapes and appearances that these photographs show.

And most wonderful of all, where these strange scenes are revealed by photography, the eye frequently beholds nothing at all. One begins to suspect that before long something equivalent to the X ray of the laboratory will declare itself in astronomical investigations and will reveal a whole new universe within and around the known universe of stars.

In one respect particularly the latest Lick photographs of nebulae are intensely interesting. Frequently the question is asked by those who, although interested in astronomical progress, have not followed it closely, "Has the famous nebular hypothesis of the origin of the world been exploded by recent discoveries?" How the impression it had been exploded became so wide spread it would be hard to say, but no one studying the photographs in question could long entertain a doubt as to the nebular hypothesis. Instead of being exploded through the process of discovery, as some over-zealous churchmen have pretended, it has been immensely strengthened, and the Lick photographs alone would have given birth to such a hypothesis if the genius of Kant and Laplace had not anticipated them.

Out of a nebula we came and into a nebulae we shall return, is a

proposition the first half of which, at least, can be regarded as established. There are photographs, for instance, which exhibit as clearly as any thing possibly could do the emergence of suns, planets, satellites out of the nebulous clouds. The process is there before your eyes. You cannot dispute it. The various stages of world creation are represented, not all in one nebula, of course, but in many nebulae, in different stages of development and condensation. If we had sufficient time, if human life were more than a span, we could watch the changes in a particular instance. But it takes millions of years to make a sun and more millions to compact a planet. Yet to doubt that the results of the process are before us represented by these photographs would be as irrational as to doubt that the grain of seed in the ground and the sprout pushing above the soil and the fullgrown stalk with its leaves and berries are all bound together as successive phases of one continuous process of growth and evolution.

Take the wonderful photograph which Professor Keeler, the director of the Lick Observatory, has recently discussed in the scientific journals, representing the strange Trifid nebula in the constellation Sagittarius one of the richest regions of celestial space within ken from the earth. The latest teaching of astronomy is that that curious haze sprinkled with stars and channeled with dark winding gaps running into endless branches like the roots of a gigantic tree, contains the potency of a future system of suns and worlds. No miracle is needed; no intercession of creative power. That nebula holds the atoms of coming planets and moons, and the essences from which their inhabitants are to be compounded. Once on a time this solar system of ours was as formless and chaotic as that huge mass of glowing gasses in Sagittarius. But it held the seed of humanity, awaiting its time to sprout and spring up and grow into the beauty of the "image of God."—[N. Y. Journal.]

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