***Weird Fiction and Science at the* Fin-de-Siècle. By Emily Alder. (Cham, Switzerland: Palgrave Macmillan, 2020. 250 pages, £74.99 (hbk) £54.99 (pbk) £59.99 (ebk) listprices) ISBN 978-3-030-32651-7**

Weird fiction exists in the crevices, hovering on the fringes of gothic, horror, fantasy, and science fiction: borderland narratives dealing with disturbing encounters of the numinous. Such fiction at the *fin de siècle*, according to Emily Alder's recent work, pivots on the era's marginalised sciences, collapsing binary distinctions and established categories in determining alternative world views. The selected gothic narratives are illustrated as weird by engaging with the period's uncertain navigation of modern positivist science alongside Christian humanist ideals in seeking to understand the physical world and the mysteries beyond. The borderlands of fictious worlds in these narratives are seen through 'the borderlands of science' (8). What Alder means by borderland sciences of the *fin-de-siècle* are the less-tangible scientific strands of (para)psychology, theoretical physics, evolutionary biology, and empirical research into the era's occult revival. This book uncovers, as Alder explains, how nineteenth-century science and the imaginative capability of weird fiction both asked 'questions about how the world could be understood' (32). Using narratives of writers such as Blackwood, Nesbit, Stevenson, Machen, and Hodgson, Alder makes a case for weird tales as the literature of borderland science of the *fin-de-siecle*, wherein fictional narratives drew on contemporary positivist science to explore the non-material, invisible realms and the unknowable creatures that slip through the veil. Academics and non-academics interested in nineteenth century speculative fiction, contemporary attitudes to scientific advancement or the era's philosophy will find this text invaluable.

Arranged thematically rather than chronologically, Alder begins with narratives that reflect contemporary psychological and philosophical debates. Both Stevenson's *Strange Case of Dr. Jekyll and Mr. Hyde* (1886) and Machen's *The Great God Pan* (1890) revolve around scientist figures, reworking contemporary scientific knowledge (alchemical and neurological experiments) to explore the boundaries of the physical, known world, opening a fissure into weird realms of unimaginable, intangible alternatives. Fragmented narratology not only reflects the emerging concept of multiple selves but also demonstrates the narrators' inability to describe the elusive figures made physically weird through spiritual or mental rifts. Those experimented on fail to cope with the weird numinous encounters while, scientific success,

Alder argues, manifests weird ontological embodiments and offspring who remain beyond scientific description and understanding.

'Weird tales are sites of experiment', Alder states, understood as 'narrative laboratories in which alternative systems of knowledge and knowing can be imaginatively tested' (79), and her argument subsequently focuses on the scientific ramifications of gaining empirical knowledge through weird self-experimentation in Stevenson, and tales by Machen and Edith Nesbit. The stories highlight nineteenth century questions on the 'relationship between body and mind', as 'sensory experience' demonstrates 'the knowing (and limits to the knowing) of a more-than-visible world' (82). Drawing comparisons between the era's prolific scientific self-experimentation and spiritualist practices of the séance, the *fin-de-siècle* occult offered an epistemology that discarded the boundaries between the material and immaterial that weird fiction embraces. The sensual experiences through (self-)experimentation of each story's scientist reveal a 'vivid, but also strange, new, and indescribable' knowledge that 'still remains slightly out of reach' (91). As Alder argues, the use of 'a weird, hybrid, borderland science' (103) in these narratives contest and 'unsettle conventional hierarchies of intellect over feeling, human over nature, mind over body' (109), often resulting in overwhelming, indescribable horror in the unknown realm of the weird. Included alongside stories where 'material and immaterial forces combine to make and embody the weird monster' (143), are tales of the psychic detective figure that Alder calls weirdfinders. Influenced by The Order of the Golden Dawn and theosophic symbology, these weirdfinders attempt to combine spiritualist rituals and scientific practices to investigate and tackle weird phenomena. Using the Flaxman Low (1898) and John Silence (1908) stories, Alder demonstrates how these responded to the 'modern occult scientist' (145) figure emerging within contemporary borderland sciences.

In part II, Alder brings the spotlight round to weird creatures and how Darwinian and Lamarkian theories within evolutionary biology were debated and theorised with weird results. While the Beast People of Wells' *The Island of Doctor Moreau* (1896) are frequently read as monstrous hybrids that underline the horrors of vivisection to highlight anxieties of degeneration and fears of scientific advancement, Alder uses this argument to focus on the largely overlooked weird offspring. These little pink animals that 'resembl[e] both rabbits and cats', Alder states, 'cannot be readily assimilated into a gothic framework' (171). Although they are monstrous in their violation of bodily shape and animal category boundaries, they do not threaten human identity and are, thus, weird creatures that defy acknowledged scientific

theories. As off-spring of a grafted hybrid species that should not be possible, they signify a rent in scientific reality through which seeps ‘another weird biological borderland’ (171). Of course, Wells also ventured into the botanical weird, not mentioned here, although Alder does acknowledge that carnivorous plants and other similar ‘liminal forms of cryptogams [fungus, lichen, mould] are used to produce monsters that blur the boundaries of animal and plant’ (175). The fungal creatures of Hodgson’s stories, Alder argues, however, are not hybrids, ‘but something else altogether’ (177). Already considered an interstitial kingdom, a gothic monster as ‘fungus transforms old material into new living shapes’ (178), within Hodgson’s heterotopic fictional spaces it is an ‘intrinsically weird’ liminal being (179). Alder skilfully demonstrates how these weird fungal creatures defy categorisation and description by the stories’ narrators as the monsters evolve, transform, modify, and proliferate, ultimately threatening the ‘dissolution of human identity’ (181).

Finally, ‘[o]n the borderlands of familiar science, … [19thC] physics produced a new space for the weird’ (199), Alder asserts, where ‘the discovery of X-rays in the 1890s’ (199) became confused in the overlap with psychical research and energy transformation. ‘Einsteinian physics and quantum theory’ (199) revealed light particles and other more-than-visible energy that offered inspiration for weird fiction writers. Against the nineteenth-century scientific discussions of electricity, energy, atoms and forces, Alder explores the weird storyworlds of Blackwood and Hodgson and how they ‘explain unseen dimensions and weird entities’ (201) thermodynamically. They ‘are weird’, she argues, ‘*because* they are woven tapestries of science, metaphysics, occultism, imagination, and genre tropes’ (201, italics in original).

Throughout this book, Alder argues that weird tales ‘could only have developed’ from the 1880s onwards in response to and ‘concurrently with changing conditions in scientific theory, practice, and philosophy’ (200). Exploring how marginalised sciences were employed within imaginative worlds to investigate the numinous behind the everyday in this way offers a unique reading of these narratives that broadens gothic and weird scholarship with a history of science, cultural attitudes towards scientific advancement, and contemporary debates within both science and philosophy. Researchers interested in these interdisciplinary fields will want to add this book to their reference library.

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