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CALL IT TRANSMUTATION: THE RADIOACTIVE POETICS OF GASTON LEROUX
AND MAURICE LEBLANC'S DETECTIVE FICTION.

Abstract

This article explores the role and representation of radioactivity in two popular novels of the first decades of the twentieth century: Gaston Leroux's *Le Mystère de la chambre jaune* (1907) and Maurice Leblanc's *L'Île aux trente cercueils* (1919). It examines how the idea of transmutation emerged as a key concept in the discourse surrounding radioactivity in the years immediately following its discovery, and how Leroux and Leblanc seized on this in their work, using radioactivity's metaphorical energy to generate narratives which themselves enact various processes of transformation, and in doing so instantiate the transmutation of the adventure novel into the detective novel.

Keywords: Radioactivity, adventure, detective fiction, fiction, Leroux, Leblanc, mystery, transmutation

In the twenty-first century the word radioactivity conjures a variety of images, from the mushroom cloud over the Bikini Atoll to Alexander Litvinenko in his hospital bed, via Godzilla, three-eyed fish and Fukushima. The adjective 'radioactive' collocates most often with words like waste, fall-out, contamination and decay. It was not always thus. In the early twentieth century radioactivity was not an object of fear but a source of excitement. In France, the award of the 1903 Nobel Prize in Physics to Henri Becquerel, for the discovery of uranium radiation, and Marie and Pierre Curie, for their subsequent research into the phenomenon they baptized radioactivity, elicited considerable interest, compounded of both scientific curiosity and nationalist self-gratulation.¹ That winter, readers of *Le Matin* patiently

queued outside its offices for a chance to see a lump of pitchblende, aureolized by its miniscule radium content.² Department stores stocked spinthariscopes and amateur photographers used their equipment to go radium hunting. In cabarets couples danced the Radium Waltz, while at the Folies-Bergères Loïe Fuller performed a Dance of Radium in a phosphorescent dress.³ Once its therapeutic uses were grasped, the commercial possibilities of radium were harnessed by manufacturers; advertisements in magazines from the first three decades of the century show the enormous array of (supposedly) radioactive products available, everything from cigarettes to camembert. Radioactivity had entered the popular imagination. Unsurprisingly, it quickly entered the popular novel as well.

This article will explore the role and representation of radioactivity in two popular detective novels of the first decades of the century: Gaston Leroux's *Le Mystère de la chambre jaune* (1907) and Maurice Leblanc's *L'Île aux trente cercueils* (1919). *Le Mystère* introduced the French reading public to teenaged reporter and super-detective Joseph Rouletabille, who would go on to enjoy an illustrious career in a further seven novels by Leroux; its enduring claim to fame, however, is as the first locked-room mystery. *L'Île aux trente cercueils* is an instalment in the *Aventures extraordinaires d'Arsène Lupin*, the series of novels and short-stories written between 1906 and 1939 whose eponymous hero, dandiacal second-storey man and amateur detective, remains one of the best-known figures in French popular fiction. Reading these novels alongside each other presents a twofold interest. First, it tells us something about the early cultural history of radioactivity, a subject which has received scant scholarly attention (in comparison with its post-1945 phase).⁴ Second, it tells us something about the early history of the detective novel.

These two lines of enquiry seem, at first blush, somewhat divergent, but I hope to show that they intersect in intriguing ways. It is a basic axiom of the detective serials of the early twentieth century that there is no such thing as mere coincidence. When Jérôme Fandor,

the detective-journalist who pursues super-criminal Fantômas across 32 hallucinatory novels, hears of mysterious ‘taches lumineuses’ being spotted along the Seine, he assumes, ‘bien que cela fût absolument improbable’,⁵ that they are related to the recent discovery of a corpse in the same area. Of course, he is correct, and his intuitive leap blows the case wide open. Taking my cue from Fandor and the delirious interpretive practices of his fellow pulp detectives, I have played a hunch: attending to echoes, resonances, and half-rhymes across two separate discourses, I have tried to discern the superfine filaments linking phenomena which now seem to have little to do with each other – radioactivity and detectives – in order better to understand a constellation of preoccupations, aspirations and anxieties that existed in the early twentieth century. The thread tying together the two phenomena discussed here is the idea of transmutation. This emerged as a key idea in the early discourse surrounding radioactivity, and both Leroux and Leblanc seized on it in their work, using radioactivity’s metaphorical energy to generate narratives which themselves enact various processes of transformation, turning the real into the fictional and instantiating the transmutation of the adventure novel into the detective novel. This article will thus explore how the idea of transmutation itself was transformed as it travelled across the intellectual and cultural landscape of early twentieth-century France, migrating from the realm of the scientific to that of the literary, from energy physics to detective fiction. It is a story that begins in Montreal, in the MacDonald Laboratories at McGill University.

Transmutation, Energy and Invisible Rays

It was at McGill in 1900 that Frederick Soddy and Ernest Rutherford started working together on the problem of radioactivity. In 1896 Becquerel, investigating the relationship between phosphorescence and X-Rays – the stupefying phenomenon discovered the previous

year by Wilhelm Röntgen – had first discovered that uranium spontaneously emits radiation. The Curies had built on his research, establishing that thorium shared this property and, more dramatically still, discovering two new radioelements, polonium and radium. Radioactivity was equal parts marvellous and mysterious. Marvellous because it seemed to be a new kind of energy, but mysterious because the source of that energy was unclear. Did it come from inside the radioactive elements themselves, or from outside them?⁶ This was a puzzle that Rutherford and Soddy helped resolve, when they observed that during the process of radioactive decay thorium spontaneously transforms into radon, thus proving that it was a subatomic phenomenon. Legend has it that on first witnessing this, Soddy exclaimed: ‘Rutherford, this is transmutation: the thorium is disintegrating and transmuting itself into argon gas [sic]’. To which Rutherford supposedly replied: ‘For Mike’s sake, Soddy, don’t call it transmutation. They’ll have our heads off as alchemists.’⁷

This vignette is one of those anecdotes which, like Newton’s apple, is de rigueur in popular retellings of the development of physics, doubtless because the clash between Soddy’s enthusiasm and Rutherford’s caution suggests both the mad scientist archetype and the idea of the white-coated laboratorian as sobersided skeptic. Soddy’s use of alchemical terminology to characterize the process of radioactive change is widely echoed in the media discourse surrounding radioactivity in the years following its discovery; the language of the marvellous, the fantastic and the supernatural was everywhere. Radioactivity seemed to have magical properties, linked to its transformative dimension. Not only were radioactive elements themselves incessantly transforming, but they were capable too of transforming other bodies: in 1905 English physicist William Crookes used radium bromide to change a diamond’s atomic structure and thus its optical properties, turning it green. The popular novelist Paul d’Ivoi built the plot of his 1907 novel *Le Radium qui tue* around gemstone irradiation: a villainous jeweller steals all the radium in the world in order to turn his stock of

worthless corundums into much more expensive gemstones. The power of radium – ‘ce corps anormal et féérique’ – to transform pebbles into precious stones is described precisely as the realisation of ‘le rêve de l’alchimie moyennéageuse’.⁸ If in Paul d’Ivoi’s story the transformative potential of radium is deployed to somewhat banal ends, others had grander visions of what radioactivity could achieve. Soddy, for example, concluded his 1909 *The Interpretation of Radium* with a dream of the golden age restored: ‘A race which could transmute matter would have little need to earn its bread by the sweat of its brow. [...] [S]uch a race could transform a desert continent, thaw the frozen poles, and make the whole world one smiling Garden of Eden’.⁹ Keen amateur physicist Gustave Le Bon, who was intensely interested in radioactivity, similarly suggested that it could lead to the establishment of the classless society: ‘Le savant qui trouvera le moyen de libérer économiquement les forces que contient la matière changera presque instantanément la face du monde. [...] Le pauvre serait alors l’égal du riche et aucune question sociale ne se poserait plus.’¹⁰ When Henri Poincaré described radium in 1905 as ‘ce grand révolutionnaire du temps présent’,¹¹ he was referring to the fact that it undermined the basic tenets of the Newtonian universe, but his words had a much broader resonance: radioactivity’s power to transform the material conditions of human society seemed, in theory, limitless.

Radioactivity was transformative on other levels, too. It was part of a chain reaction of spectacular discoveries in experimental physics, beginning in 1895 with that of X-Radiation, that changed the status of physics, establishing it as the sovereign scientific discipline, a position which in France had been occupied by the life sciences for much of the previous 50 years.¹² This epistemological change had various consequences, two of which are significant for our purposes. First, it produced a reconfiguration of the relationship between the visible and invisible worlds. Whereas the life sciences were grounded in an epistemology of the visible,¹³ the new physics was concerned with forces that were immensely powerful

and yet unseen. X-Rays and uranium rays were only two of a long list of invisible rays discovered around the turn of the century, including N-Rays, rays of positive electricity, selenic rays and magnetic rays (none of which, in fact, exist).¹⁴ Physicists' work on such phenomena ostensibly paralleled that of those other questers in the realms of the unseen, psychics and spiritualists, also on the hunt for invisible emanations. Indeed, Henri Bergson, in his 1913 presidential address to the Society for Psychical Research in London, compared telepathy to the invisible force of electromagnetism: '[W]e produce electricity at every moment, the atmosphere is continually charged with it [...], yet for thousands of years millions of human beings have lived who never suspected [its] existence [...]. [I]t may be that this is now our case with telepathy'.¹⁵ A few years later, in 1919, D. H. Lawrence, dabbler in the arcane, wrote: 'Our plasmic psyche is radio-active, connecting with all things and having first knowledge of all things'. One of the usage quotations for radioactive offered by the OED, Lawrence's statement shows that the idea of radioactivity could easily be pressed into service for esoteric speculation. As Rutherford had warned, physics became curiously entwined in the early years of the twentieth century with crackpot occultism, a feature reflected, as we shall see, in both *Le Mystère de la chambre jaune* and *L'Île aux trente cercueils*.

At the same time, the new physics implied a new ontology, one in which energy had priority over matter. The discovery of radioactivity suggested that when we see matter as something stable and inert, our eyes deceive us. Within radioactive elements – and it was widely believed at the turn of the century that all elements were, to a degree, radioactive –¹⁶ energy outburst succeeds energy outburst, change cascading through the substance in a series of explosive disruptions. To speak of matter was to speak merely of a temporary and partial stabilization of energy. Thus Soddy wrote of radium: 'This one element has clothed with its own dignity the whole empire of common matter. The aspect which matter has presented to

us in the past is but a consummate disguise, concealing latent energies and hidden activities beneath an impenetrable mask.’¹⁷ In erasing the boundary between the animate and the inanimate, radioactivity, in Luis Campos’s phrase, ‘made the inanimate world *alive*’.¹⁸ Indeed, radium was thought to have life-promoting, possibly even life-creating powers: at Cambridge, John Butler Burke carried out a series of experiments, the results of which were interpreted by excitable journalists as proving that radium could spark inanimate substances into life.¹⁹ The transmutation of metals was not the only long-cherished human dream radioactivity seemed able to fulfil; more excitingly still, it allowed for the tantalizing possibility of life everlasting. The new physics, with its emphasis on transmutation and boundless energy, was, therefore, a site of utopian speculation in the early twentieth century; little wonder that it should irradiate the emergent genre of detective fiction, itself deeply preoccupied with ideas of transformation.

‘What vitality there is in them, what vigour, what life’.

The *Romans-Revue: guide de lectures* of March 1909 defined the *roman policier* (a term attested since 1908) in the following terms: ‘les aventures extraordinaires où on lutte dans le mystère contre des ennemis invisibles, partant plus redoutables [...]. Le feuilleton populaire se renouvelle. Sherlock Holmes a passé par là’.²⁰ For readers familiar with Todorov’s celebrated account of the detective novel two elements of this definition are surprising: the association with adventure and the emphasis on danger. For Todorov, there is no danger in a detective novel: ‘Ce roman ne contient une mais deux histoires: l’histoire du crime et l’histoire de l’enquête. [...] La première, celle du crime, est terminée avant que ne commence la seconde. Mais que se passe-t-il dans la seconde? Peu de choses. Les personnages de cette seconde histoire, l’histoire de l’enquête, n’agissent pas, ils apprennent. Rien ne peut leur

arriver: une règle du genre postule l'immunité du détective.'²¹ For Todorov, therefore, the *roman policier* is defined by the fact that it tells two stories, the second of which, the narrative of enquiry, occludes the first, thus purging the detective story itself of jeopardy and of adventure in the etymological sense.

In implicitly placing adventure in opposition to the detective novel, Todorov in fact echoes comments made by Jacques Rivière in 1913 in 'Le Roman d'aventure', an essay published across three issues of the *Nouvelle revue française*. In this essay, Rivière sketched out the ideal of a new kind of novel, one able to meet the cognitive, aesthetic and emotional demands of readers of his generation, who could find in the contemporary novel, still mired in the neurasthenic pessimism of the *fin de siècle*, nothing that resonated with their vitality and optimism. Considering whether the detective novel might be thought of as an example of this putative *roman d'aventure*, he wrote: 'le roman policier est à la place du roman d'aventure. Il n'est pas le roman d'aventure. [...] Tout le roman s'avance sur une route déjà parcourue; simplement, la première fois, on était allé trop vite pour rien voir; maintenant on regarde mieux'.²² The *roman policier*, despite its promise of mystery and suspense, is defined precisely by the fact that its characters, and by extension readers, are not in reality *en aventure*.

For Dorothy L. Sayers, the quality identified by Todorov and deprecated by Rivière – absence of jeopardy, lack of adventure – is precisely the source of detective fiction's superiority over other forms of popular fiction. In a BBC wartime radio talk for French audiences (but, owing to the events of 1940, never in fact broadcast), Sayers distinguished the ratiocinative whodunit, '[which] presents its readers with a mystery which can only be solved by a process of reasoning',²³ from the thriller, a form which engages not the mind but the nerves, doing so through repeatedly placing its protagonist in danger. On to a formal, narratological distinction, Sayers thus maps an ethical one: whereas detective fiction is a

cerebral form, inculcating respect for the rule of law, the thriller is essentially a sensationalist one, encouraging sympathy for miscreants. The keynote characteristic of detective fiction here becomes a basic commitment to reason. In a similar vein, S. S. Van Dine insisted in his ‘Twenty Rules for Writing Detective Fiction’ that in the true detective novel:

The method of murder, and the means of detecting it, must be rational and scientific. That is to say, pseudo-science and purely imaginative and speculative devices are not to be tolerated in the roman policier. Once an author soars into the realm of fantasy, in the Jules Verne manner, he is outside the bounds of detective fiction, cavorting in the uncharted reaches of adventure.²⁴

Here again a distinction is drawn between adventure and detective fiction, with the former serving as the latter’s abjected other. For Van Dine the distinction operates not, or not only, at the level of narrative organization, as Rivière and Todorov suggest, but at the level of representational content: the detective novel never entertains the possibility of the impossible. Again, Van Dine casts this as an ethical issue; the use of ‘cavorting’ carries a clear note of moral censure.

For Todorov, Rivière, Sayers and Van Dine, therefore, the detective novel, in its ideal form, is defined in opposition to the adventure novel, in a broad sense. Whether this purified form of detective literature has ever in fact existed is a question beyond the scope of this article; what is important for us to note here is simply that the idea of anti-adventure detective fiction has long existed as a theoretical horizon, that there is within detective fiction, as a form, a tendency away from, even a suspicion of, adventure. But in the early twentieth century, as the quotation from *Romans-Revue* indicates, the *cordon sanitaire* between detective fiction and adventure fiction had yet to be erected. If the *roman policier* had begun to crawl out of the primordial soup of nineteenth-century popular fiction, it remained an

amphibious form.²⁵ The special quality of early twentieth-century French detective fiction, its impurity, is reflected in the nomenclature devised by scholars who have viewed this corpus from a more recent standpoint: Jean-Claude Vareille uses the term *roman policier archaïque*, and Jean-Paul Colin *roman policier d'aventures*, to mark the difference between the detective novels of a Leblanc or a Leroux and the *roman à énigme classique*.²⁶ Certainly both the Lupin and Rouletabille series remain in many senses close to the adventure novel. Both were advertised under the rubric of 'aventures extraordinaires', and with good reason: hymning energy as a psychological quality (it is Lupin's pre-eminent characteristic, and Rouletabille is able even to smoke energetically),²⁷ these stories repeatedly place their heroes in dangerous situations from which they escape through native wit and force of character. In this respect, early twentieth-century French crime serials belong, as the reviewer from *Romans-Revue* suggests, in a long tradition of popular fiction, stretching back through Verne, Dumas and Sue. They also inherit from the nineteenth-century *roman feuilleton* an obsession with the idea of disguise. Their heroes and anti-heroes seem able to metamorphose at will, sloughing off old identities and assuming new ones with ease, freed from the drudgery of always having to be the same person.²⁸ The thematics of disguise, of volitional self-creation and re-creation, is the utopian dimension of these stories, and doubtless the deep anthropological root of their appeal. It is also what makes them so fundamentally implausible. Thus Hercule Poirot, half-scoffing but half-charmed, remarks of the Lupin stories: 'How fantastic, how unreal. And yet what vitality there is in them, what vigour, what life! They are preposterous, but they have panache.'²⁹

In fact, for Poirot, Leblanc and Leroux's work represents two competing tendencies in detective fiction. He contrasts the swashbuckling exuberance of the Lupin stories with the rigorous construction of *Le Mystère de la chambre jaune*: 'that is really a *classic*! I approve of it from start to finish. Such a logical approach!'³⁰ His preference is unsurprising. Leblanc's

novel inscribes itself clearly in what was already established as the grand tradition of the detective novel, that of Poe and Conan Doyle, explicitly tipping its hat to ‘The Murders in the Rue Morgue’ and ‘The Adventure of the Speckled Band’, prototypes of the locked-room mystery.³¹ This was precisely the tradition that would culminate in the work of Christie and her Golden Age peers. But, in truth, Poirot’s judgements could be reversed. Many of the Lupin stories rival any Anglo-American Golden Age story as puzzle fiction. Indeed, they are *romans à énigme* in the most literal sense; one of the structuring devices of the *Aventures Extraordinaires* as a whole is the existence of four unsolved historical riddles. *Le Mystère*, on the other hand, finally rests on a thoroughly *rocambolesque* use of disguise.

The early twentieth-century French detective novel was, therefore, a form in the process of transmutation. It was the heir of adventure fiction, inheriting many of its tropes and topoi, including a preoccupation with the idea of metamorphosis, but it was also transforming into something new, which would come to define itself in opposition to adventure fiction. It is here that the stories of early detective fiction and radioactivity intersect. Both *Le Mystère de la chambre jaune* and *L’Île aux trente cercueils* enact a process of transformation, and, as we shall now see, both use the idea of radioactivity to do so.

Le Mystère de la chambre jaune and the dissociation of matter.

Before turning his hand to writing fiction, Gaston Leroux had enjoyed a successful career as a journalist. When *Le Mystère*, his first novel, initially appeared in serial form in *L’Illustration*, it was trailed with a profile of its author which described his extensive travels – on the storm-tossed seas of the Atlantic to intercept Nordenskjöld on his return from Tierra del Fuego, to Egypt to interview the Heroes of Chemulpo, to the oil-fields of Baku where he was nearly shot as a spy.³² Given all this, the reader settling down to read the opening chapter of *Les Aventures extraordinaires de Joseph Boitabille, reporter* (the protagonist’s name was

later changed for legal reasons) could reasonably expect a story about the capers of a globetrotting investigative journalist, an adventure story in the Jules Verne mould. What they would instead have found is a detective novel in the Conan Doyle mould, in which a precocious teenaged journalist solves a baffling crime. The victim of the crime is the physicist Mathilde Stangerson, daughter of the eminent Professor Stangerson, who is preparing to present to the Académie des Sciences a paper outlining a theory that will revolutionize physics, that of ‘la dissociation de la matière’.³³ One night, the two are working late in their laboratory, assisted by their servant Joseph. Mathilde retires to her adjacent bedroom. Professor Stangerson and Joseph hear her lock and bolt the door from the inside. At half past midnight, they hear screams coming from Mathilde’s room, the sounds of a struggle and at least two shots fired. When they finally break down the door there is only one person in the room, namely Mathilde, not quite dead. The assailant appears to have disappeared into thin air. In the reader’s universe, such sudden is impossible. It is not entirely clear, however that it is impossible within the fictional universe the characters inhabit. In a novel which revels in misdirection and red herrings, which leaves the reader baffled at every turn, the link between the theory of the dissociation of matter and the events of the novel is the most tantalizing idea of all. As Rouletabille himself says of the mystery of the yellow bedroom: ‘l’étrange phénomène [...], jusqu’à nouvel ordre et naturelle explication, me semble devoir prouver mieux que toutes les théories de Professeur Stangerson, « la dissociation de la matière »’ (ibid., p. 246).

Of course, the solution to the mystery has nothing to do with the dissociation of matter. Nonetheless the saliency of the idea in the text seems to demand critical attention. Scholars such as David Platten and Andrea Goulet have examined it in the context of the novel’s epistemological concerns, reading it in relation to the clash staged in the novel between an empirical method represented by the police detective Frédéric Larsan and the

arch-rationalism of Rouletabille, who is contemptuous of a method founded on ‘les traces sensibles’.³⁴ Jacques Dubois links this epistemological dimension to the question of genre, arguing that the dissociation of matter functions metaphorically and self-reflexively to figure the way in which the novel dissolves the traditional elements of popular fiction and redefines the *romanesque*: ‘la leçon du cycle Stangerson ne peut plus échapper au bon bout de notre raison: la véritable aventure est mentale et non plus physique, les éléments n’adviennent plus que dans la chambre de l’esprit’.³⁵ For critics who read the idea of the dissociation of matter symbolically, it is the very vagueness of the idea that enables, even demands such a reading. Thus Dubois notes that scant information about the work of the Stangersons is given in the text.³⁶ For Platten too, ‘the precise nature of their research is not entirely clear’.³⁷

The contemporary reader would, however, have had no difficulty in recognizing in the Stangersons’ work an allusion to the theories of Gustave Le Bon, whose garden-shed experiments with invisible rays in the mid-1890s led him to develop a theory of generalized radioactivity. Le Bon’s work on rays had been dismissed by the scientific establishment by 1900,³⁸ but this did not deter him from publishing in 1905 a monograph, *L’Évolution de la matière*, which adumbrated his theory of the dissociation of matter and enjoyed considerable commercial success.³⁹ According to Le Bon, matter and force were both energy, and energy was the stuff of which the universe was made. All matter was gradually dematerializing, returning to the imponderable ether from which it had originally been formed and to which it would eventually return. For readers in 1907, therefore, the idea of the dissociation of matter was a transparent topical reference to a well-known book which had found a wide and receptive readership. Does recognizing it as such change the way we understand its role within *Le Mystère*? I would suggest that it does, and that one of the most salient aspects of the novel is precisely the way in which it builds its fictional world through the incorporation and transformation of actual-world elements. The use of Le Bon’s theory, which itself

describes an incessant movement from the material plane to the ethereal plane, from the ponderable to the imponderable, thus functions self-reflexively to figure the text's own poetics of transmutation, whereby the actual is transformed into the fictional.

The first allusion to a real event occurs in the novel's second paragraph. The text opens with a gesture familiar to readers of detective stories, as the narrator, Sainclair, Dr. Watson to Rouletabille's Holmes, promises to tell us the never-before-revealed truth about the notorious mystery of the yellow bedroom, which once had all of Paris agog:

La « Chambre Jaune! » qui donc se souvenait de cette affaire qui fit couler tant d'encre il y a une quinzaine d'années? On oublie si vite à Paris. N'a-t-on pas oublié le nom même du procès de Nayves et la tragique histoire de la mort du petit Menaldo? Et cependant l'attention publique était à cette époque si tendue vers les débats, qu'une crise ministérielle [...] passa complètement inaperçue. Or, le procès de la « Chambre Jaune », qui précéda le procès de Nayves de quelques années, eut plus de retentissement encore.⁴⁰

The allusion here to the Nayves trial of 1895 serves the seemingly straightforward purpose of anchoring the story in a specific place at a specific time. Just as through pastiching the opening of a Sherlock Holmes story Leroux establishes a generic frame of reference for his readers, so in referring to a notorious criminal trial he establishes a social one, reassuring them that the world of the story is an extension of the world in which they live (or in which they had lived a decade or so before). Moreover, the Nayves trial, the facts of which have little in common with the mystery of the yellow bedroom (it involved a dissolute Marquis, a neglected child and a considerable inheritance), nevertheless has a specific resonance in the novel, since it was the trial which first established Leroux's reputation as a journalist when, using false credentials to gain access in the guise of a criminal anthropologist to the prison in

which the Marquis de Nayves was on remand, he secured an exclusive interview with him.

The novel therefore offers the reader a supplementary frame of reference in the form of Leroux's own career; this new cycle of novels begins by returning to the start of its creator's professional life, establishing *Rouletabille* as a fictional counterpart of the author.

The reference to the Nayves case therefore functions to suggest to the reader that the fictional world of the novel is parallel to and isomorphic with the actual world. As we move further into that fictional world, however, this effect is diminished. Let us consider the representation of the *Château du Glandier*. This is the scene of both the crime and the investigation, and it is where we as readers spend most of the novel. Le Glandier is located in Essonne, commuting distance from Paris, but the chapter in which we arrive there is entitled 'Au sein d'une nature sauvage', and this use of the language of adventure fiction *à la Jules Verne* presents it as a strange and exotic land. The chapter begins, however, with a description that interpellates us not as adventurers but as tourists: 'Le château du Glandier est un des plus vieux châteaux de ce pays d'Ile-de-France, où se dressent encore tant d'illustres pierres de l'époque féodale.'⁴¹ There follows a description of the château which reads as it is has been excerpted from a guidebook. It may well have been, for the castle described in *Le Mystère* – located in Sainte Geneviève-des-Bois, built under Philippe le Bel, 'un amas de constructions disparates [...] dominé par un donjon' (ibid., p. 52) – is recognizably a real place, save for one detail: the actual château is not called le Glandier, but is known simply as 'le Donjon'. What significance attaches to the name 'le Glandier'?

The text in fact furnishes a response to this question:

Le Glandier, autrefois « Glandierum » s'appelait ainsi du grand nombre de glands que, de tout temps, on avait recueillis en cet endroit. Cette terre, aujourd'hui tristement célèbre, avait reconquis [...] l'aspect sauvage d'une

nature primitive; seuls, les bâtiments qui s'y cachaient avait conservé la trace d'étranges métamorphoses. Chaque siècle y avait laissé son empreinte : un morceau d'architecture auquel se liait le souvenir de quelque événement terrible, de quelque rouge aventure; et, tel quel, ce château, où allait se réfugier la science, semblait tout désigné à server de théâtre à des mystères d'épouvante et de mort.⁴²

These lines, following the initial description of the château, which provides historical and topographical information consistent with the details of the actual-world Donjon in Sainte-Geneviève-des-Bois, overlay that fact with fiction. They serve to establish the gloomy atmosphere of a paradigmatically gothic site. They also provide two explanations for the name, one explicit (the profusion of acorns in the park) and one implicit. We find the latter in the allusion to 'le souvenir de quelque événement terrible', for the name le Glandier will reactivate, for some readers, memories of the trial of the notorious Marie Lafarge, who may or may not have put arsenic in her husband's eggnog, and whose marital home was the dilapidated *chartreuse du Glandier*. The reference to Lafarge helps to create the lugubrious atmosphere of Leroux's château, but beyond that the facts in the Lafarge case are so remote from anything that happens in *Le Mystère* that it can function neither as clue nor even red herring. It is a clear but gratuitous reference, the gratuitousness itself contributing to the gothic quality of le Glandier, a place characterized by excess and indeterminacy. It is both a tumbledown ruin and a science installation, a place where everything seems to mean something, but nothing really makes sense.

The use of the language of adventure fiction to describe the château ('au sein d'une nature sauvage') is, therefore, not only a means of creating humour through bathos; it also indicates that le Glandier, although only a short train journey from Paris, is a different world, not just an extension of the one we already inhabit. Were the novel to have invented a

fictional château situate in a real place, or situated a real château in a fictional place, this would have grafted the fictional elements on to a rootstock of reality and served as a gage of the possibility of the fiction. But instead the novel emphasizes the impossibility of its fictional world by superimposing on to the image of a real chateau in a real place (the Donjon of Sainte-Geneviève-des-Bois) the image of another real place (the chartreuse du Glandier). The description of the château du Glandier as ‘un amas de constructions disparates’ therefore takes on a self-reflexive quality: the fictional château is itself built out of disparate references. Similarly, the representation of the architecture as palimpsestuous and characterized by ‘étranges métamorphoses’ invites us to see in *le Glandier* a self-reflexive figure of the novel’s own textual operations, in two inter-related ways. The construction of a scientific installation on top of the site of ‘quelque rouge aventure’ points to a generic shift, from a sensationalist mode of popular fiction to an ostensibly more cerebral one, from adventure to detection. It also represents *en abyme* the workings of a novel in which real people (such as Le Bon, the Curies, and Marie Lafarge) appear in disguise or as ghostly presences, and in which a strongly marked intertextual dimension insistently brings other books to the reader’s mind. Just as *le Glandier* is believed to be haunted, so is the text, and just as in the Stangersons’ laboratory matter transforms into energy, so in the text the actual turns into the fictional, the literal into the figurative, the referential into the self-referential.

Le Glandier, explicitly denominated a site of adventure, is associated with the impossible and the inexplicable. As long as we are there, we ‘cavort in the uncharted realms of adventure’, to reprise S. S. Van Dine’s terms. But ultimately of course the novel respects Van Dine’s rule that the method of the murder be naturalistic; *Le Mystère* is emphatically a detective novel, which culminates in a Parisian courtroom with a triumphant show of deductive reasoning, in which the guilty party is identified and the baffling events of the yellow bedroom explained. To succeed as a detective novel, the story must effect a move

from the impossible to the improbable. This it does. The murderer, we learn, is none other than the master criminal Ballmeyer, Mathilde's estranged husband, who has spent the entirety of the novel in disguise as the detective Larsan (and who is also – why not? – Rouletabille's father). In the figure of Ballmeyer there is a reference to Eugène Allmayer, the King of Rogues, who enjoyed a highly successful pan-European criminal career in the 1880s, repeatedly avoiding arrest thanks in part to his gift for disguise.⁴³ '(B)Allmayer' connotes improbability, but clearly, since he was a real person, not impossibility.

But if the reference to Allmayer enables a transition from the regime of the impossible to that of the improbable, the novel nonetheless resists making a parallel move back from the fictional to the real. We might expect the reference to Allmayer to act as a stepping-stone back to reality for the reader, functioning in a similar fashion to the Nayves allusion, assuring the reader that the fictional world is an extension of the real world she inhabits. But Allmayer also connotes fiction, both because he was known to the press as 'le nouveau Rocambole' and because, as a serial impostor, he was a consummate fiction-monger. His quasi-appearance at the end of the book is part and parcel of the text's sustained emphasis on its own fictionality. One oddity of the novel's end is that although Rouletabille identifies the murderer he also lets him escape, to general astonishment. He justifies his decision thus: 'Je ne suis pas de la « justice », [...] je suis un humble journaliste, et mon métier n'est point de faire arrêter les gens! [...] Préservez, vous autres, la société, comme vous pouvez'.⁴⁴ Rouletabille's position is unorthodox: from the late Second Empire onwards crime reporters had sought to counter accusations of sensationalism by emphasizing the social utility of their work.⁴⁵ Some writers of detective fiction, including, as previously mentioned, Dorothy L. Sayers, have similarly emphasized the ethico-political dimension of detective fiction, arguing that it bolsters support for the rule of law. Just as Rouletabille seems to advocate journalism for journalism's sake, so Leroux's novel seems to revel in

fiction for fiction's sake. At the start of the novel, Sainclair promises that the book will reveal 'toute la vérité' of the mystery of the yellow bedroom, placing the expression *entre guillemets*. The innocent explanation for the *guillemets* is that Sainclair is reassuring the reader that he is a reliable witness, and what follows is sworn testimony. But there is a second, ironic explanation, for the *guillemets* also remind us that in a novel the promise to tell the whole truth has no illocutionary force, and in a fiction, the truth can only ever exist in inverted commas. Leroux's text does not seek to efface its own status as fiction, but rather flaunts it.

Le Mystère de la chambre jaune was, with much fanfare, presented by *L'Illustration* as Leroux's first novel.⁴⁶ This is disputable: in 1903 he had written a *roman-feuilleton*, *La Double Vie de Théophraste Longuet*, published in *Le Matin*. But *La Double Vie* doubled as a competition for readers of the newspaper; scattered throughout it were clues for a treasure hunt around Paris. *Le Mystère* was his first autotelic novel. The transformation of the actual into the fictional, the release of the vast quantities of narrative energy stored in newspaper columns, is not just a means to an end in the Lerouvian text, but the end itself. Transposing Le Bon's theory from the physical to the aesthetic, Leroux developed what we might call, thinking of radioactivity in the terms in which it was understood in the early twentieth century, terms no longer readily available to us, a radioactive poetics. Let us now turn to our second text, *L'Île aux trente cercueils*, which offers, initially, a much more familiar image of radioactivity.

L'Île aux trente cercueils and the Radioactive Supervillain

L'Île aux trente cercueils is a book of unrelieved strangeness, involving, amongst other elements, druids, human sacrifice, ariosophy, and a very communicative dog. It is the culmination of a saturnine tendency in the Lupin novels that began with *813* (1910), in which

Lupin battled agents of the Kaiser, a tendency clearly linked to the darkening geopolitical situation. Indeed, *L'Île aux trente cercueils* can only really be made sense of in the context of the First World War. As a prefatory note states: 'la guerre a compliqué l'existence au point que des événements qui se passent en dehors d'elle [...] empruntent au grand drame quelque chose d'anormal, d'illogique et, parfois, de miraculeux'.⁴⁷ This quotation establishes the two chief concerns of the novel, both in terms of its thematics and its poetics: excess and ambivalence. The briefest summary of its plot suggests its basic quality of exorbitancy.

The novel is set in 1917 and its protagonist is Véronique d'Hergemont. As a young woman Véronique married a German man called Alexis Vorksi, whom she loved passionately but soon discovered to be a violent alcoholic. She managed to escape from her abusive marriage, finding refuge in a convent and then in a quiet life as a provincial *modiste*. Her son, meanwhile, went to live with his maternal grandfather, an eminent Breton historian and folklorist. Tragically, both grandson and grandfather perished in a sailing accident. Vorski too is dead by the time the action of the novel starts – or at least so Véronique has been led to believe. The novel sees her follow a mysterious trail that takes her to the island of Sarek, off the coast of Brittany, where she finds her dead husband and son still alive, the latter a prisoner of the former. Vorski is now convinced that he is the man spoken of in an ancient prophecy inscribed on a stone in Sarek, the man who, after making a series of blood sacrifices culminating in the crucifixion of his wife, will gain access to the mysterious 'Pierre Dieu'. According to the prophecy, possession of this stone, 'qui donne vie ou mort',⁴⁸ will confer upon the chosen one unlimited power. Much of the novel is taken up with Véronique's attempts to save her son and escape from Sarek (with the assistance of her childhood sweetheart Stéphane, with whom she has been improbably reunited, and faithful canine companion, Tout-Va-Bien). Lupin finally appears, dressed as a Druid, as a *deus ex machina* to ensure a happy ending. The extreme sadism of Vorski, the allusions to sexual violence

scattered throughout a book which also seems aimed at a young readership (it is François, the child, who takes control of the situation following his reunion with his mother), the unsatisfactory ending in which no real justice is meted out (Vorski is simply left on the island to die at the hands of his accomplices) – all this makes the novel something of a monstrosity.

The novel is also about monstrosity, incarnate in the figure of Vorski. Physically he is characterized by disproportion: ‘c’était un homme de stature athlétique, puissant de torse, le jambes un peu arquées, le cou énorme et gonflé par les tendons des muscles, avec une tête trop petite’.⁴⁹ His physical appearance reflects his moral character, also characterized by disproportion. He confesses, in a rare moment of lucidity, that ‘j’ai toujours poussé les choses à outrance’ (ibid., p. 155). This tendency is most obvious in his overweening ambition. Vorski, who believes himself to be ‘le prophète illuminé que les dieux couronnent de gloire’ (ibid., p. 190), quintessentializes the mysticism and will to tyranny frequently ascribed to the German mindset in the period.⁵⁰ Indeed, in their final confrontation Lupin refers to him as a ‘Superboche’, ironizing his ariosophical belief that he is an Aryan superman (ibid., p. 231). The narrator too reaches for hyperbole, stripped of Lupin’s irony, when he describes Vorski as a criminal ‘hors de toute proportion’ (ibid., p. 242). But Vorski is not the only thing on Sarek that is disproportionate: so too are the flowers that grow in the stone circle, the focus of all the legends that swirl around the island. They are described in a crescendo of exaltation as: ‘Des fleurs inimaginables, fantastiques, des fleurs de rêve, des fleurs de miracles, des fleurs hors de toute proportion avec les fleurs habituelles’ (ibid., p. 71). The mysterious island, with its baleful name, is also a site of unexpected beauty, a locus of ambivalence as well as excess. This ambivalence attaches most obviously to the Pierre-Dieu itself, ‘qui donne vie ou mort’, and which seems to spread its influence over the novel as a whole, where the miraculous (the restitution of François, the reunion with Stéphane) is juxtaposed with the aberrant. The beneficent and noxious powers which in the Pierre-Dieu

are commingled are also dichotomized in the characters of Lupin and Vorski. The two are mirror images of each other: both consider themselves fortune's favourite, both have faked their own death (Lupin at the end of *813*), both in their way are antiquarians who enjoy solving historical riddles, both are *aventuriers*, both are distinguished by huge reserves of energy [although in the case of Vorski, '[sa] réelle intelligence et l'énergie peu commune étaient gâtées par un esprit faux et superstitieux' (ibid., p. 11)]. The difference, of course, is that one is good and one is evil. Naturally the former triumphs. The final confrontation is described in the following terms: 'Il y avait, l'une en face de l'autre, deux forces miraculeuses, l'une émanant de lui, Vorski, l'autre émanant du Vieux druide, et la seconde absorbait la première' (ibid., p. 215). The language here of 'forces miraculeuses' and emanation explicitly invites us to see the two men as being analogous to, or even in some sense activated by, the Pierre-Dieu, source of so much mystery in the novel.

Doubtless you, like Lupin, have solved the mystery in a trice: the Pierre-Dieu is nothing other than a radium deposit. In linking Lupin and Vorski, superhero and supervillain, to radioactivity, Leblanc's novel anticipates the comic books of the atomic age, where superpowers were often the result of exposure to radiation. So familiar is the representation of radioactivity in the novel that it is easy to forget that Leblanc was still writing in radium's age of innocence, before nuclear weapons, before even the case of the 'radium girls' effected a decisive shift in public opinion towards seeing radium as something fundamentally dangerous.⁵¹ Simply to assimilate Leblanc's novel to the later corpus of atomic superpower para-literature would obscure what is in fact at stake within it, both in historical and literary historical terms.

Better to understand the importance of radioactivity within *L'Île*, let us consider what Lupin says about it, when at the end of the novel he explains to François the true nature of the Pierre-Dieu:

Qu'était-ce que cette petite puissance surnoise, capricieuse, méchante, incompréhensible, qui s'attachait à la pointe d'une baguette magique, et qui agissait à tort et à travers, selon la fantaisie ignorante d'un chef barbare ou d'un druide, qu'était-ce à côté du pouvoir bienfaisant, clair, loyal, et tout aussi miraculeux, qui nous apparaît aujourd'hui à travers une poussière de Radium?⁵²

Lupin here contrasts two ways in which energy is emitted, one destructive and one beneficent, the former associated with Vorski, barbarism, and the regime of legend, and the latter with Lupin, the modern, and the regime of science. The terms employed to describe the positive effects of radium are telling. If the adjective 'bienfaisant' immediately evokes the curative potential of radiotherapy, the use of 'clair' gives the reader momentary pause, since the radiation in question here belongs to the non-visible portion of the electromagnetic spectrum. The idea of clarity only functions in opposition to the idea of the occult, which swirls around Sarek, Vorski and the Pierre-Dieu throughout the novel. This opposition is central to the text, part and parcel of the movement it describes from superstition to science and from mysticism to reason. This movement can be understood on both an ideological and generic level.

On the ideological level, *L'Île aux trente cercueils* functions as a work of propaganda, in which French classicism is pitted against German gothicism and emerges triumphant. From the early stories, which pit 'notre voleur national' against a phlegmatic Herlock Sholmès, the Lupin stories are marked by a strongly nationalist dimension. In those stories, Frenchness seems largely a matter of charm and insouciance. Here, Lupin's arrival dressed as a druid 'apporte dans l'aventure l'ordre et la raison'.⁵³ In researching his novel, Leblanc had asked his publisher to send him a copy of the Breton historian Fustel de Coulanges's *Histoire des institutions politiques de l'ancienne France*, which develops the thesis that the German

invaders of the fourth century did not significantly alter Romano-Gallic culture, a thesis co-opted by the *Action française* since it implied that modern France was heir to a classical intellectual heritage, defined in opposition to Gothic romanticism.⁵⁴ The Breton setting of *L'Île* does not only allow Leblanc to create an atmosphere of strangeness and superstition, but also therefore to reaffirm a Maurassian understanding of French intellectual culture. This is then tied in the text to the idea of contemporary France as a centre of scientific research; Lupin intends to give the Sarek radium deposit to the government and endow a research laboratory. It is in the context of this idea of France as a scientific state that we can make sense of the otherwise odd use of the epithet 'loyal' to describe radioactivity. It is hard initially to see how an ethical quality can be ascribed to a physical phenomenon, 'loyal' being more apt to describe good soldiers than chemical elements. In describing radioactivity as 'loyal', Lupin in fact turns radium into a good soldier, its power disciplined, controlled and deployed in the interests of the state. In the figure of Vorski, the novel presents a nightmare vision of the destructive capacity of unrestrained energy; in Lupin it demonstrates the necessity of channelling energy appropriately, which means in the national interest.

The movement in the text from irrational to rational, and from the unregulated to the controlled, also has generic implications. The first part of the text, dominated by Vorski, involves the exploration of unknown terrain, mortal peril, repeated attempts to escape from a shadowy danger, and a high degree of suspense. Its interest is generated by a simple question: will Véronique et al., survive? It is, in short, an adventure story. From the moment Lupin appears, bringing order and reason, the mystery in the text dissipates and the sense of peril evaporates. The lurid thrills of the first, disequibrated part of the novel give way to a reasoned explanation of everything that has happened. In other words, it stops being an adventure novel and becomes a detective story. The struggle between Lupin and Vorski can therefore be read as a struggle between two genres. *L'Île aux trente cercueils*, despite its own

generic hybridity, nonetheless belongs within that tradition of detective fiction which defines itself in opposition to adventure fiction, presented as intellectually and ethically dubious. More specifically, *L'Île* presents adventure fiction, associated with Vorski, as characterized by imaginative dysregulation. Vorski consistently has trouble distinguishing between reality and fantasy. His mission, as summarized by Lupin, consists '[à] transporter dans la vie réelle les cauchemars du frère Thomas' (the monk who wrote the prophecy on which he relies) (ibid., p. 249). He wishes, in other words, to actualize the imaginary. Conversely he himself is presented as being an imaginary creature unexpectedly actualized. When Véronique is confronted with the husband she believed dead the text tells us: 'c'était bien l'homme qu'elle avait imaginé' (ibid., p. 152). The verb 'imaginer' here is perhaps not the most obvious choice; it is clearly being used in its primary sense of calling to mind the image of someone, but it carries traces of its other sense of to invent, to create. In either case, Vorski is associated with the imagination. His readiness to believe that he is talking to a thousand-year-old druid when Lupin appears in the text in disguise is further proof of an overheated imagination, its activity unchecked by reality-testing. The role of Lupin, when he arrives, is not just to solve the mystery and to dispense justice; more fundamentally, it is to restore a sense of a coherent reality. The ultimate oddness of *L'Île aux trente cercueils* is that it asks its flamboyantly fictional hero to perform such a task.

Conclusion

The discovery of radioactivity was a transformative moment on a number of levels: it transformed physicists' understanding of the world, it transformed the status of physics, and it helped to transform the cultural climate of early twentieth-century France. Proof that there were more things in heaven and earth than dreamt of in Newton's philosophy, radioactivity contributed towards the emergence of a new sensibility, energetic and in search of adventure.

But if radioactivity was fascinating, it was also inexplicable, at least until Einstein formulated the theory of general relativity, and for many years its practical applications were limited. It was not entirely clear in the first decades of the twentieth century what it meant or what exactly it could do. As a result, the concept of radioactivity was available to writers chiefly as a metaphor. Both Leblanc and Leroux released its metaphoric energy and used it to power their narratives: in *Le Mystère de la chambre jaune* the idea of the dissociation of matter figures the text's transmutation of the actual into the fictional, while *L'Île aux trente cercueils* is a mutant novel, 'hors de toute proportion'. That both can be described as exemplifying a radioactive poetics demonstrates how polyvalent the idea of radioactivity was in this period, for the two novels code radioactivity very differently. In *L'Île* radioactivity is the focus of both hopes and anxieties, and in this respect Leblanc's novel seems much closer to our own post-1945 understanding. But the anxieties associated in Leblanc's novel with radium do not reflect wider anxieties at the time about radioactivity per se; rather the anxieties about uncontrolled, undisciplined energy in the novel are linked to the First World War, and the concept of adventure. No reader would hesitate to identify *Le Mystère* as a detective novel, but it also explicitly invites us to identify it as an adventure novel, expanding that category by presenting fiction itself as an adventure, and celebrating its escapist value. *L'Île* is much more ambivalent about the value of adventure fiction. In this respect, it is part and parcel of a broader post-war turn away from adventure. In 1919, for example, Albert Thibaudet published an article in the *NRF* (now under the editorship of Jacques Rivière), on the subject of 'Le Roman d'aventure', pondering its fate in a culture oriented towards contemplation. He concludes that: 'Le vrai, le pur et le transparent roman d'aventures, c'est celui dont la dernière démarche consiste à abdiquer l'illusion de l'aventure, à enterrer comme Prospero sa baguette magique, à reconnaître que l'aventure est partout, et qu'il suffit de regarder avec certains yeux la vie humaine la plus simple pour la voir s'installer [...] dans le royaume de

l'extraordinaire'.⁵⁵ These words could describe the ending of *L'Île aux trente cercueils*, in which Lupin removes his Druidic disguise, acknowledges that his ancient magic is nothing more than firecrackers and misdirection, and urges readers to recognize that miracles nowadays are effected in laboratories by scientists in white coats. The reasons for reconceptualization of adventure are not far to seek. As Pierre Mac Orlan wrote on the first page of his 1920 book, *Petit Manuel du parfait aventurier*: 'La guerre pouvait être considérée comme une aventure. Nous savons tous ce qu'elle a donné quand nous fûmes à même de la réaliser, sans qu'il nous fût nécessaire de faire intervenir les ressources propres aux vies imaginaires'.⁵⁶ The post-war world had had enough of adventure. Reading *Le Mystère* and *L'Île* alongside each other, the difference in the representation of radioactivity between 1907 and 1919 is immediately apparent. The source of that transformation lies not in radium's own transmutative energy, however, but in the cataclysm of war.

¹ The *Journal des débats politiques et littéraires* bemoaned the lack of public interest in radioactivity until the award of the Nobel. See 'Revue des Sciences: Le Radium', 24 December 1903, p. 1.

² See 'Le Radium au "Matin" [sic]', *Le Matin*, 21 December 1903, p. 1

³ See Claire de Morini, 'Loie Fuller: The Fairy of Light', in Paul Magriel ed., *Chronicles of the American Dance* (New York: Henry Holt, 1948), pp. 202-220 (214-15)

⁴ On the relative paucity of work on ‘the radium age’, see Matthew Lavine, *The First Atomic Age: Scientists, Radiations and the American Public, 1895-1945* (New York: Palgrave Macmillan, 2013), pp. 1-8.

⁵ Marcel Allain and Pierre Souvestre, *Le Fiacre de nuit*, in *Fantômas*, 5 vols (Paris: Robert Laffont, 2013-15), III (5-275), 112.

⁶ See Pierre Curie, Nobel Lecture: <https://www.nobelprize.org/prizes/physics/1903/pierre-curie/lecture/>

⁷ See Marjorie C. Malley, *Radioactivity: A History of a Mysterious Science* (Oxford: Oxford University Press, 2011), pp. 51-52, and Linda Merricks, *The World Made New: Frederick Soddy, Science, Politics and Environment* (Oxford: Oxford University Press, 1996), pp. 31-32.

⁸ Paul d’Ivoi, *Le Radium qui tue*, in *Œuvres complètes de Paul d’Ivoi*, 20 vols (Paris: Tallandier, 1934-5), XII (1935), pp.10 and 81.

⁹ Frederick Soddy, *The Interpretation of Radium* (London: John Murray, 1909), p. 244.

¹⁰ Gustave Le Bon, *L’Évolution de la matière* (Paris: Flammarion, 1905), pp. 47-8.

¹¹ Henri Poincaré, *La Valeur de la science* (Paris: Flammarion, 1939), p. 180.

¹² See Pierre Citti, *Contre la déadence: histoire de l’imagination française dans le roman 1890-1914* (Paris: Presses Universitaires de France, 1987), pp. 113-126.

¹³ See for example Foucault’s *Naissance de la clinique: une archéologie du regard médical* (Paris: Presses universitaires de France, 1963), pp. 107-123.

¹⁴ See Helge Kragh, ‘The “New Physics”’, in *The Fin-de-siècle World*, ed. by Michael Saler (Routledge: New York, 2015), pp. 441-455 (p. 449), and also Malley, pp. 8-9.

¹⁵ Henri Bergson, “Phantasms of the Living” and “Psychical Research”, in Bergson, *Mind Energy*, trans. by H. Wildon Carr (Westport, CT: Greenwood, 1975), pp. 75-103 (p. 80). The speech was originally delivered in English.

¹⁶ See Helge Kragh, p. 449.

¹⁷ Soddy, pp. 224-5.

¹⁸ Luis A. Campos, 'The Birth of Living Radium', *Representations*, 97/1 (Winter 2007), 1-27 (p. 10).

¹⁹ See Campos, pp. 18-20.

²⁰ R. Ravède, 'A travers les romans du mois', *Romans-Revue: guide de lectures*, 15th March 1909, p. 211.

²¹ Tzvetan Todorov, 'La typologie du roman policier', in *Poétique de la prose* (Paris: Seuil, 1971), pp. 55-65 (p. 57).

²² Jacques Rivière, 'Le Roman d'aventure' (Paris: Syrtes, 2000), p.79.

²³ Dorothy L. Sayers, *Les Origines du roman policier: a wartime wireless talk to the French* (Hurstpierpoint: the Dorothy L. Sayers Society, 2003), p. 15.

²⁴ S. S. Van Dine, 'S. S. Van Dine Sets Down Twenty Rules for Detective Stories', in *The American Magazine*, September 1928, pp. 129-131 (p. 130).

²⁵ On the pre-history of French detective fiction, see Elsa de Lavergne, *La Naissance du roman policier: du Second Empire à la Première Guerre mondiale* (Paris: Garnier, 2009)

²⁶ See Jean-Claude Vareille, *L'Homme masqué, le justicier, le détective* (Lyon: Presses universitaires de Lyon, 1998) and Jean-Paul Colin, *La Belle Epoque du roman policier français - aux origines d'un genre romanesque* (Lonay: Delachaux et Niestlé, 1999).

²⁷ See Gaston Leroux, *Le Mystère de la chambre jaune* (Paris: Le Livre de poche, 1960), p.

30. The Lupin stories, which have a marked Barrèsian dimension, might be described collectively as a 'roman d'énergie nationale'. On this see Emma Bielecki, 'Arsène Lupin: Rewriting History', in Angela Kimyongür and Amy Wigelsworth ed., *Rewriting Wrongs: French Crime Fiction and the Palimpsest* (Newcastle: Cambridge Scholars Publishing, 2014), pp. 47-61.

²⁸ See Didier Blonde, *Les Voleurs des visages: sur quelques cas troublants de changements d'identité* (Paris: Seuil, 1992).

²⁹ Agatha Christie, *The Clocks* (London: The Crime Club, 1963), p. 123.

³⁰ Christie, *The Clocks*, p. 123.

³¹ Leroux, p. 9.

³² See 'Les Livres et les écrivains', *L'Illustration*, 7 September 1907, p. 166.

³³ Leroux, p. 10.

³⁴ See David Platten, 'Reading-glasses, guns and robots: a history of science in French crime fiction', *French Cultural Studies*, 12 (2001), 253-270 and Andrea Goulet, *Optiques: The Science of the Eye and the Birth of Modern French Fiction* (Philadelphia: University of Pennsylvania Press, 2006), pp. 137-152.

³⁵ Jacques Dubois, *Le Roman policier ou la modernité* (Paris: Nathan, 1992), p. 164.

³⁶ Dubois, p. 163.

³⁷ Platten, p. 258.

³⁸ Leroux, p. 55.

³⁹ See André Lalande, 'Philosophy in France (1906)', *The Philosophical Review* 16:4 (1907), 357-386 (p. 357).

⁴⁰ Leroux, pp. 7-8.

⁴¹ Leroux, p. 52.

⁴² Leroux, pp. 53-4.

⁴³ For a full account of Allmayer's criminal career see Albert Bataille, *Causes criminelles et mondaines de 1888* (Paris: Dentu, 1888), pp. 233-259.

⁴⁴ Leroux, p. 388.

⁴⁵ See Olivier Isaac, 'Les Enquêtes balbutiantes des journalistes durant l'affaire Troppmann', in *L'Enquête judiciaire en Europe au XIX^e siècle*, ed. by Jean-Claude Farcy, Dominique Kalifa and Jean-Noël Luc (Paris: Créaphis, 2007), pp. 231-239.

⁴⁶ See 'Les Livres et les écrivains', *L'Illustration*, 7 September 1907, p. 166.

⁴⁷ Leblanc, *L'Île aux trente cercueils* (Paris: Le Livre de poche, 2013), p. 6.

⁴⁸ Leblanc, p. 17.

⁴⁹ Leblanc, p. 153.

⁵⁰ See, for example, Gustave Le Bon, *Enseignements psychologiques de la guerre européenne* (Paris: Flammarion, 1916), p. 68.

⁵¹ The 'radium girls' were employees of the U.S. Radium Corporation, which made glow-in-the-dark novelties. They suffered from a variety of catastrophic health problems linked to radium exposure. They sued their employer and after lengthy litigation were finally awarded damages in 1928. 'The Innocence of Radium' is the title of a Lavinia Greenlaw poem about them.

⁵² Lupin, p. 280.

⁵³ Leblanc, p. 255.

⁵⁴ See Numa Denis Fustel de Coulanges, *Histoire des institutions politiques de l'ancienne France. Première partie: l'empire romain, les germains, la royauté mérovingienne* (Paris: Hachette, 1875), pp. 414-421, and Stephen Wilson, 'Fustel de Coulanges and the Action Française', *Journal of the History of Ideas*, 34/1 (1973), 123-134.

⁵⁵ Albert Thibaudet, 'Le Roman de l'aventure', in *Réflexions sur le roman* (Paris : Gallimard/NRF, 1938), pp. 71-81 (p. 81).

⁵⁶ Pierre Mac Orlan, *Petit Manuel du parfait aventurier* (Paris: Editions de la Sirène, 1920), p. 11