CHARLES VALENTINE RILEY (1843–1895) ranks as one of the distinguished founders of entomology in North America. As we reflect on his contributions on the centennial of his death, we recognize a paradox of the field of entomology. Although it addresses issues vital to human welfare, the subject has been largely ignored by historians of science and technology.

Our discipline is now, on the eve of the twenty-first century, entering an era of unprecedented opportunity as we advance goals in molecular biology, biodiversity, biotechnology, chemical ecology, and integrated pest management. In reaching this favorable position, we stand on the shoulders of giants, our predecessors, whose zeal and vision have served us well. Yet, we hardly know these individuals and the circumstances that motivated them. Without this knowledge, our discipline cannot build a rich heritage that instills pride in its members and attracts the best and the brightest of the new generation. It is in the context of these considerations that we address the life and times of Riley, whose remarkable career has been shrouded in mystique these hundred years since his death.

Riley's life is divided into distinct chapters, defined chiefly by geography and time. Cities draw their character from the geography of the land and the people that inhabit them. In Riley's case, cities and rivers of four countries shaped the environment that nurtured him. Along the Thames

Riley was born in London on 18 September 1843, at Caroline Cottage, Queen Street, between Trafalgar Square and the Thames River. This location was within a pram ride of the heart of London with its great shrines and symbols of empire. Riley and his younger brother, George, were christened at St. Luke's church near their birthplace. The boys were illegitimate children of Mary Cannon, a beautiful and capricious young woman, and Charles Edmund Fewtrell Wylde, an Anglican clergyman. The children's surname, Riley, was part of the deception engaged in by their parents. Wylde died in debtor's prison at 51, and Mary died of dissipation and disappointment at 58.

When Riley was three years old, he and George, eighteen months his junior, moved from their mother's home in London to Walton-on-Thames, some fourteen miles outside London, to live with their great aunt, a family stalwart of 61 years. Two years later they moved to the home of a laboring class family in the status of "nurse children." English middle-class parents devised a number of plans by which the rearing of their children was relegated to others.

1 Details of Riley's parentage and early childhood were drawn from public records, family archives, and Riley's journal covering the period 1850-1857.
The semiagricultural district not far from London was idyllic for the small boys who had the run of the gardens and estates. The Thames provided an opportunity for boating, fishing, and swimming, and its towpaths were fruitful areas for collecting bird eggs, berries, and insects. The lush horticultural areas, such as Oatlands Park, with their ponds and spacious grounds also were appealing to the young boys who were often left on their own for adventure and entertainment. Riley's eight years at Walton coincided with the great surge of interest in natural history that characterized the Victorian era. The prevailing philosophy of the rising middle class approved of leisure time, provided it was spiritually uplifting, disciplined, and purposeful. Entomology met all these prerequisites and became the most popular branch of natural history. Riley had the good fortune of winning the favor of distinguished residents who introduced him to the natural history collections—the "cabinet"—as a feature of Victorian life. This experience encouraged young Riley to exercise his innate artistic talent and his interest in insects. The two became inseparable parts of his life (see Allen 1976, Barber 1980, Merrill 1989).

When Riley was twelve years old, he and his brother moved back to London as pupils in a typical English boarding school. There they learned the stern discipline of schoolmasters, the rigors of athletics, and scholarship in the British tradition. Throughout this formative period, the boys were, despite their illegitimacy, accorded love and devotion by their mother and her extended family. There were no contacts on their father's side. Their mother visited them regularly, shared her love of nature and her vibrant spirit, and returned to her life in London, now as a married woman, completely apart from her sons.

Across the Channel

When Riley was thirteen, he and his brother crossed the channel to become students at College Sainte Paul in Dieppe, France. It was not uncommon for middle-class English families to send their children to French schools to learn the French culture and language, Latin, Greek, and art. The boys' free time was devoted to the wonders of marine life in the tidal pools along the shore, hikes to the rural countryside, and visits to the city with its theater, shops, and amusement park. Riley's interest in art and insects was compatible with the school's objectives. He made an insect collection and an art sketchbook devoted chiefly to flowers and insects. The Dieppe experience lasted two years and established Riley's special aptitudes as a student of art, natural history, and language.

Along the Rhine

At fifteen, Riley moved to Bonn, Germany, to become an art student in the British enclave there. The city boasted famous Friedrich Wilhelm University, botanical gardens, and an agricultural institute. Riley studied art under the renowned Christian Hohe, who rejected the vogue of romanticism, focusing instead on realistic depictions of natural history, especially the landscape of the picturesque Rhine Valley. Hohe's students were required to study the full range of subjects as is revealed by Riley's sketchbook consisting of 59 drawings. (An example of Riley's art is shown.) Riley's stay in Bonn introduced him to the intellectual climate of an enclave dominated by artists and scholars, intensive training in art, the unique German philosophy of education and research, and fluency in yet another language.
Along the Kankakee

For reasons not totally understood, Riley moved in 1860, not to Paris to study art as urged by his mentor, but to Kankakee County, Illinois, on the prairie frontier. Here, 50 miles south of Chicago, he joined the George Edwards family, friends of his own family in London. They had immigrated several years earlier to engage in the livestock farming so enthusiastically touted by advertisements in the London papers. They had joined the great wave of Europeans eager to acquire land on the “grand prairie” (Bogue 1959).

The frail, youthful Riley demonstrated great tenacity in mastering the rigorous routine of herding cattle, breaking sod, planting, and harvesting. In the community of Kankakee with its diverse ethnic representation, Riley emerged as a spokesman fluent in French and German and with a sense of community service. Three years’ experience witnessed his passage from sheltered art student sketching the Rhine to a seasoned farmhand and community leader. In the process, he came to appreciate the vicissitudes of farm life, including the ravages of insects. The legacy of this experience was a passionate advocacy for rural people.

Chicago and The Prairie Farmer

Worn by the demanding farm routine, ill health, and the onset of another winter, Riley suddenly decided to forsake the farm and seek his livelihood in Chicago. He promptly settled his affairs and moved to Chicago, arriving in early January 1863 at nineteen, without career plans and with little money. His initial efforts to gain employment were discouraging. Chicago was in mud or frozen mud. A series of jobs provided sparse income. Chicago with its crime, prostitution, and stagnant economy was a hostile environment for an inexperienced youth. His spirits sagged as his savings and credit were exhausted after three months. Suddenly, all of that changed. He landed a job with the Prairie Farmer, the foremost farm journal of the West. Riley found himself among progressive leaders imbued with boundless faith in the potential of agriculture as the linchpin of national development in moving from a rural to an urban society. The Prairie Farmer took many steps to promote education among farmers. One was the establishment of a lounge and reading room where farmers in the city could stop by to visit, exchange ideas, and scan the latest literature touting the agricultural revolution.

In this setting, all of Riley’s previous experiences suddenly were drawn into play: practical farm experience, vicarious feel for tillers of the soil, mastery of French and German languages, artist, and budding entomologist. With his keen powers of observation, practical recommendations for insect control, appealing Victorian prose, and attractive illustrations, he soon gained a loyal following among the subscribers to the Prairie Farmer.

Besides his activities with the journal, he immersed himself in the social, cultural, and intellectual life of the city, including the Chicago Academy of Science. By the time the renowned Louis Agassiz visited the city in February 1864, Riley was well enough established among the scientific leaders to be invited to the dinner in Agassiz’s honor.

In the meantime, Riley reached beyond the city and established a network of correspondence with the entomological leaders of the country—John L. LeConte, Asa Fitch, and Benjamin D. Walsh. Such initiative on the part of a young man, inexperienced and unknown, was indicative of things to come.

Riley’s call to his subscribers to submit specimens for identification produced an enthusiastic response. He was overwhelmed by the workload and limitations of his knowledge. He responded by organizing several lo-

Riley’s drawing, Mehlem and Königswinter, landscape on the Rhine. Done in 1859 while a student of Christian Hohe, Bonn, Germany.
cal entomologists who could exchange specimens and contribute to a reference collection. Riley visualized such a collection as an essential foundation for applied entomology. In time, he came to view this as a need best met by a National Insect Collection, and his specimens acquired in Chicago became part of such a collection.

The years 1863 to 1868 were a time of great professional growth for Riley as he learned the insect fauna, enlisted the cooperation of subscribers, and laid the groundwork for educating his clientele.4

Soldier

Riley's Chicago experience was interrupted by a short tour of military duty. Chicago, with its diverse ethnic groups, cultural diversity, and numerous newspapers, was a hotbed of debate on the Civil War, although the state of Illinois was firmly committed to antislavery and the Union cause, influenced in part by President Abraham Lincoln, the rail-splitter of Illinois. Riley was strongly antislavery, which, together with news of casualties among his friends from Kankakee, apparently led him to enlist. He joined the 134th Regiment of Illinois volunteers in May 1864 and was discharged six months later.5 This unit was composed of 100 day soldiers, organized to replace regular troops holding ground that already had fallen to Union forces. The seasoned troops so released were to move south for the attack on Vicksburg and the final knockout blow to end the war.

Riley saw no combat but traveled widely in the lower Mississippi. What impressed him most was the devastation of the area and the appalling lack of discipline among troops frequently forced to forage for their subsistence. Although Riley deplored the lack of discipline, he saw nothing wrong with combining insect collecting with tours of guard duty. He returned to The Prairie Farmer more mature and with firm convictions about peace and war, gratitude to his loyal friends at The Prairie Farmer who had accorded him gracious considerations during his absence, and renewed enthusiasm for entomology.

Along the Mississippi

Riley's light had shone too brightly for him to remain indefinitely with The Prairie Farmer. Following the lead of New York and Illinois, Missouri established a position of state entomologist under the supervision of the Board of Agriculture and appointed Riley to it on 1 April 1868. Both Riley and the Board were located in St. Louis. In taking office, he followed in the footsteps of his fellow countryman and colleague, Benjamin Dann Walsh, Illinois state entomologist. They made a great team, drawing on the disciplined self-righteousness of their Victorian heritage and assuming the role of guardians.

*Riley's communications with his readers are revealed in his column in The Prairie Farmer, 1863–1869.

*Riley's experiences as a private in the 134th Regiment of Illinois volunteers are reported in his journal for the period 8 May 1864–9 November 1864. Official records of the unit are in Report of the Adjutant General of the State of Illinois, vol. 7 for years 1861–1868.
This diagram of life history stages of the fall webworm is another in Riley’s series of illustrations for his lectures (Archives of Kansas State University, Manhattan, KS).

The fall webworm, *Hyphantria cunea* Drury, is an example of Riley’s artistic style, evident in the cover designed for the publication (see front cover). This became the hallmark of the emerging entomology, tuned to the needs of expanding agriculture and the richness of the continent’s entomological fauna.

The loss of Walsh and the growing pressure of Riley’s new position forced him to abandon the publication in 1870. Much of its editorial policy and format was evident in his annual reports.

Riley met with rude awakenings in his new position. In contrast to the genial rapport among the visionary editors at *The Prairie Farmer*, he encountered the elements of bureaucracy and politics of state government. Riley quarreled about the number of pages allocated to his reports, the quality of paper and illustrations, and the distribution of reports to politicians as opposed to their intended readers, farmers. These problems became chronic.

Riley noted the limited impact of the printed word and resolved to devote more time to lecturing. He prepared an elaborate set of charts covering the classification, biology, and control of insects and embarked on lecture tours. The success of his lectures in Missouri encouraged him to go beyond the state to include Kansas State Agricultural College and Cornell University. Riley’s stature as a rising star assumed new luster from his lectures and attitude, “Have charts, will travel.”

Pressure also arose from political infighting. To the urban elected officials, having a “bugologist” on state payroll invited ridicule. Politics and budget constraints threatened the abolition of Riley’s position.

Riley’s lecture notes are at the Field Museum of Natural History, Chicago, IL. The collection of charts numbering 71 is in the archives of Kansas State University, Manhattan, KS, having been presented to the Department of Entomology of that institution by Riley’s widow. See Dean, G. A., 1938, The contribution of Kansas to the science of entomology, Trans. Kans. Acad. Sci. 41: 61-63.

This information was obtained from the daily journal of the Missouri State Senate. 4 February 1874, p. 255.

Riley’s influence was evident immediately in the lavish illustrations that overcame the drabness of the earlier publication.

The fruitful teamwork of this gifted pair was terminated by Walsh’s untimely death in November 1869. Riley’s devotion to his mentor and the eloquence of his prose is revealed in the obituary in *The American Entomologist* [1870, 2(3) 65–68].

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To be a perfectionist and artist in state government involved basic incompatibilities.

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As if troubles in St. Louis were not enough, Riley became embroiled in controversy with the University of Missouri at Columbia. From the start, it was envisioned that Riley's responsibilities would involve lecturing in entomology at the university and establishing an insect collection there in support of the courses offered. Riley was listed as a lecturer in entomology from 1868 to 1875. In 1873, in typical Riley style, he was harshly critical of the quality of agricultural education provided by the College of Agriculture (founded in 1870). This undiplomatic gesture created ill will and led to continuing disagreement over Riley's fulfilling his obligation to lecture and provide an insect collection. Riley charged that the dean of the college canceled his courses, claiming lack of funds and students.6

Although the controversy over the collection was an issue separate from his undiplomatic criticism, the two seemed to merge and place Riley in an unfavorable light. The collection issue is an example of a pattern that occurred frequently in Riley's career: that circumstances marked him as a controversial personality although the facts vindicated him in time.

The misunderstanding arose from the clause in Riley's terms of appointment as state entomologist that he would provide a collection for the State Board of Agriculture and for use by the Agricultural College when established. This provision was included on an assumption that the Board of Agriculture would be located at the Agricultural College when the latter was established. This did not occur; the Board remained in St. Louis and the College was established 125 miles away in Columbia, MO, in 1870.

When Riley was charged with evading his obligation to provide a collection for the College, the University Board of Curators appointed a committee to confer with Riley and to rectify the problem. The committee ruled that Riley was not obligated to provide two separate collections but only to allow the Agricultural College access to the collection in St. Louis. Thus, having been vindicated, Riley offered "to further the cause of economic entomology by preparing and donating a type collection to the Institution." The collection delivered in December 1874 was described in the committee report:

The committee concluded its report with the notation that "Professor Riley deserves our thanks for his generous offer." Riley was paid $350 for time, expense, and material required in preparation of the cabinet.7

Although the University of Missouri at Columbia was one of the earliest institutions to announce courses of entomology in its catalog, Riley's impact as a lecturer was limited by the separation between office and campus and by administrative bumbling. Despite these distractions, he vigorously publicized his goals and objectives, drawing on editorial skills finely honed with *The Prairie Farmer*. He also coursed the state, taking advantage of the eight railroads that provided free passes to state workers. The state of Missouri presented immense challenges through its diverse ecosystems. Bounded by the Mississippi River on the east, cut east to west by the Missouri River with prairie to the north and Ozark plateau to the southwest, lay 70,000 square miles that constituted Riley's theater of operations.

The only precedent to guide Riley in his new position was the work of Asa Fitch in New York State, who was in his fourteenth year as state entomologist when Riley was appointed. Riley had years earlier acknowledged his great debt to Fitch: "... having read and reread your most valuable work and reports."10 The two men were of vastly different temperament: Fitch's challenge came from within the bounds of New York State; Riley's was international in scope. In Riley's

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7University of Missouri-Columbia Board of Curators Minutes, 1 April 1874, Book II, p. 4455, 6. 7 December 1874, Book II, p. 4485. University of Missouri Archives; Riley also reported these events in the 7th Annual Report of the State Entomologist of Missouri, 1874, p. vi; the cabinet, drawers, and specimens are not extant. R. W. Sites to the author, 24 October 1994.

10C. V. Riley to A. Fitch, 7 November 1863. New York State Museum, Albany, NY.
Fifth Annual Report (1872, pp. 27–29), he drew on his experience to set forth the duties of the state entomologist. Riley’s essay makes clear the need for such a position. He stressed the importance of insects, converting insect loss assessments to dollars, a measure understood by his readers. He stated that the complexities of insect life were beyond the capacity of the individual farmer to master, “hence the wisdom of having a state officer for this purpose.” Such an officer must:

- Prepare an annual report on experiences and observations of the year. The report should represent “much labor in the field and close study in the closet” and should combine the practically useful with the scientifically accurate. It should be copiously illustrated.
- Answer by letter “a host of queries that are constantly pouring in upon him.”
- Protect the farmer from the impostors and quack nostrums palmed off on him.
- Lecture and be a student of the literature.
- Travel “hither and yon over the state.”
- Carry on all sorts of experiments, but above all, he must “ascertain the habits and transformations of species.”
- Form a cabinet, collect, preserve, identify, classify, and arrange while “corresponding with scientific men throughout the civilized world.”

Having thus described the duties of the state entomologist, Riley went on to offer cautions:

One person can do only so much.

According to the means expended will be the results attained.

The entomologist should not have to defray the costs of postage, books, engraving, electroplating, travel, experimental materials, cabinets and collecting paraphernalia from a salary of $3,000 per year.

Finally, I hope to live to see the day when there will be a corps of well supported economic entomologists scattered throughout the country, instead of the few who are now in the field under crippled conditions.

Knowledge of habits and transformations of species was the core of this position. While the focus was on the insects of Missouri, the network for knowledge reached out to “scientific men throughout the civilized world.” In time, the scope of the position, as visualized by Riley, became the model throughout the land-grant university system.

The monument to Riley’s labors as state entomologist is his nine annual reports entitled Noxious, Beneficial and Other Insects of the State of Missouri. They totaled 1,475 pages, an average of 164 pages each year, most of it original. Riley had intended to round out a decade of service with a tenth report and a general index to all of the volumes. He accepted another position before this was possible, but in 1881, more than three years after leaving Missouri, he provided a “General Index and Supplement to the Nine Reports.” A wealth of information is included in the index, which was published as Bulletin 6 of the U.S. Entomological Commission, Department of Interior. This was a typical Riley stroke, to provide a much-needed publication, regardless of the appropriateness of the funds used for this purpose.

The subject matter of the reports included fundamentals of entomology; descriptions of new species; life histories; means of control; instructions on rearing, collecting and preserving; timely comments on happenings in the field of entomology; book reviews; tributes to friends; and poetry. All the elements of an introductory course in entomology were included, although not in the orderly sequence of a textbook. Although stating that the reports were directed to “intelligent cultivators of the soil,” Riley used them to reach a broader audience, including professional colleagues. He saw them as an appropriate forum for debating issues among associates, a practice that earned him the enmity of those offended by his spirited attack. None of his esteemed elders were immune from such criticism (Riley 1873a, p. 154).

Riley brought a varied literary style to his reports. He was a master of the sparse prose appropriate to technical and scientific writing but was equally adept with the Victorian style and its embellishments. Even today, more than a century later, the lyrical quality of his writings makes them a delight to read.\footnote{Examples of Riley’s literary style, technical and narrative, are his reports on the grape phylloxera and katydids. Sixth Annual Report. 1873, pp. 30–44, 150–155.}
Riley shared with his readers the rationale of his philosophy of insect control. This was rooted in natural theology that glorified Nature as the supreme handiwork of the Creator. The balance of nature represented some idyllic state favorable to man. While man's interventions might alter this balance, it could be restored only if one had knowledge of the intricacies of life histories and natural enemies. The nine reports were to provide just such knowledge—hence the title, Noxious, Beneficial and Other Insects, and the first priority assigned the state entomologist: "but above all . . . he should ascertain the habits and transformations of the species" (Riley 1872, p. 28).12

Riley found the most complex life histories the most appealing: the thirteen- and seventeen-year cicadas, the grape phylloxera, the Rocky Mountain Locust, and the chinch bug. His findings on these insects elevated the study of insect biology to new levels.

Another distinctive feature of Riley's reports was the illustrations, which revealed the talents of the quintessential artist by temperament, training, and practice. The reports contained 624 illustrations (Riley 1870-1873), many of them including several life history stages. Their profusion and accuracy are unsurpassed to this day.13

Riley's belief in the balance of nature did not preclude his acceptance of Darwinism. Riley was never one to be ambivalent. Earlier he had proclaimed his admiration for Darwin's theory of evolution that "has of late years been shaking the moral and intellectual world as by an earthquake" (Riley 1868). Thereafter, he missed no opportunity to cite examples of Darwinian theory in action. Note his commentary on the katydid:

... for the rivalry among the males is as great as among higher animals, and a good instrument becomes, in this light, most important to the individual and to the species. The best player wins his coveted love, while the feeble and cripple stand no chance to impair the vigor of the race. (Riley 1873b, p. 153)

Whereas much of the Darwinian debate was theological and theoretical, Riley's evidence was at the applied level, moving the debate from the abstract realm of humans and monkeys to the practical level of crickets in the garden and phylloxera on the grapes (Riley 1871, p. 66).

Several factors combined to make Riley a crusading Darwinian. He and Walsh had conducted original research in support of Darwin's theory (Riley 1870, pp. 159-175). He enjoyed joining with Walsh in a cause, and, unlike most entomologists taking part in the debate, they had original research to back their claims. Finally, there was Riley's personal rapport with Darwin. He had been introduced to Darwin by letter from Walsh in 1868. Thereafter, Riley sent copies of his annual reports to Darwin as they appeared, and he was much encouraged by Darwin's favorable comments. In turn, Darwin found much in Riley's reports that confirmed his speculations. Riley visited Darwin at his home in 1871 and 1875 and found his reports well worn and heavily annotated (Riley 1882, Kritsky 1995).14

The nine Missouri reports represented Riley's finest hour. They drew on the classical literature, offering a clear-cut philosophy of control compatible with Darwinism that...
called for reorientation in biological thought. The reports went on to provide examples of the knowledge required to implement the philosophy. In short, Riley provided the elements that drive the contemporary concept of integrated pest management. Having spent almost a decade on the reports and smarting under the continued political jockeying that threatened his position despite its acclaimed effectiveness, Riley moved on to assignments that allowed him to expand his concepts and shape the course of events in his role as administrator and leader at the federal level.

Along the Potomac

Riley's fame had of course spread beyond the borders of Missouri. When the Rocky Mountain locust swept eastward, devastating vegetation in its path, the governors of the affected states and territories assembled and concluded that the states were ill prepared to cope with the problem and that federal intervention was required. This led to the establishment of the U.S. Entomological Commission in the Department of Interior (the Department of Agriculture had failed to gain credibility at the grassroots level, its primary activity being the distribution of seed.)

Riley, the only person who had studied the Rocky Mountain locust extensively and predicted the plague, was appointed chief of the commission, with A. S. Packard, Jr., secretary, and Cyrus Thomas, disbursing agent. Three more qualified individuals could hardly be imagined (Mallis 1971). Both Packard and Thomas had experience on the western explorations that captured the imagination of the public eager for more information on the vast region west of the Mississippi River. This distinguished trio brought a new vitality to entomological work under federal sponsorship. Their five volumes, only two of which were on the locusts, established new standards for comprehensive studies, not as "closet naturalists" but as well-qualified specialists prepared to go where the action was in the spirit of the famous Lewis and Clark and Hayden explorations of the western regions. The commission quickly determined the permanent and subpermanent breeding grounds of the species. A project of such scope had never before been undertaken. It was made possible through superb organization and inputs from railroad crews traversing the area, army troops, Canadian Mounties, and interested farmers. As never before, the establishment and publicizing of such a network riveted the public's attention on an insect problem. This was Riley at his best, bringing vision, organizational skill, and remarkable entomological perception to a crisis situation.

A year after being appointed chief of the commission, Riley was named entomologist, Department of Agriculture. To this office, he brought the independence, verve, and organizational talents so evident in the work of the commission. But, there was a catch. Riley's style, so compatible within the Department of Interior, was not welcomed within the staid Department of Agriculture headed by a political appointee, a general of the Civil War. Riley was constantly in hot water because of his impatience, intolerance of inefficiency, and resentment of administrative constraints. To this was added the limitations of ill health that plagued him throughout his life in Washington. Between bouts of "nervous exhaustion," his remarkable talents for organization and entomology asserted themselves. There emerged in the division of entomology an organization with clocklike precision to advance Riley's visionary goals.

In his private life, his marriage to Emily Conzelman, daughter of a prosperous St. Louis merchant, provided security. They had seven children (one died in infancy) and, although Riley was a tender, loving father, his role was limited by ill health and overwork. His routine included spending several months in Europe each year for his health. In all the adversity of Riley's turbulent life, Emily never faltered in her support. She viewed her husband as a genius, a man of singular dedication to government service but, alas, unappreciated and misunderstood by the petty politicians and bureaucrats. This view was shared by her children to the end.

Riley's position as head of the two federal agencies concerned with insects—the U.S. Entomological Commission and Division of Entomology, USDA—provided him with an unprecedented opportunity to influence developments in the field. He added still another office, that of honorary curator of the Smithsonian Institution. He skilfully melded the resources of the Division of Entomology and the Department of Insects. As a gesture of good faith, he donated his personal collection to the Smithsonian as the foundation of the National Insect Collection. The National In-
sect Collection still stands as a monument to achievements that can be made when scientists are united in a common goal in spite of administrative incongruities.

At the zenith of Riley’s career, he exercised control over the field of entomology to an unprecedented degree—his impact was felt on every facet of the emerging discipline (Sorenson 1995). He headed the American Association of Economic Entomologists, organized in 1889, to bring cohesiveness to the new breed of entomologists hired in the wake of the Morrill and Hatch Acts that profoundly altered the course of entomology in North America. Riley controlled not only the hiring of entomologists in the federal service but also its projects and publications. It was his vision that shaped the blueprint of economic entomology.

Such power was not exercised on the federal political scene without acrimony; Riley’s driving ambition, intensity, and frustration with ill health kept him constantly embroiled with administrators and colleagues. Fate denied him an opportunity to tell his own story although his popular and able first assistant and successor, L. O. Howard, eventually published anecdotal reports that have shaped our image of Riley (Howard 1930a, 1933). These have focused on personality traits above achievements. Howard acknowledged that his writings were not “history of the strict, modern, documented type” required to assign Riley’s place in history (Howard 1930b). In retrospect on the centennial of his death, we focus on his achievements. These include the following:

- The Missouri reports
- Biological control of the cottony cushion scale
- The Rocky Mountain locust, biology and behavior
- The grape phylloxera, biology and control
- Research and advocacy of Darwinism
- Organizing the Division of Entomology
- Organizing professional entomologists and initiating publications to bind the Brethren of the Net
- Organizing the U.S. National Insect Collection
- Training a new generation of entomological leaders.

Nothing was as therapeutic for the harassed Riley as a break from Washington and involvement in what he enjoyed most, field studies. In the spring of 1894, he went to Montserrat in the Caribbean to scout for parasites of citrus pests with his assistant, Henry Hubbard. On his return, he was set upon by the department’s administrative staff for violating travel restrictions, an issue of long standing. It was implied that Riley intentionally deceived the administration. This was too much for the proud, imperious Riley. Indignant, hurt, worn by overwork and ill health, he finally bowed to the wishes of his family and resigned the same year. This step was no doubt gratifying to his unsympathetic administrators who, as bureaucratic politicians, had never understood Riley’s obsession to advance the field of entomology.

Because “resignation” from federal office was often a synonym for being fired, Riley went to great pains to convince his friends that resignation was his own choice. In any event, the die was cast. In his hurt, he turned to his position as honorary curator at the Smithsonian. This was his security blanket, an integral part of his grand design, untainted by politics and administrative bickering. For all practical purposes, this marked the end of his career in public service.

The proud Riley, exhausted by poor health, tension with associates, and his own relentless spirit, could look back on unprecedented achievements, but it was not in his nature to rest on his laurels.

The Fall

Despite Riley’s great plans for work at the Smithsonian after his resignation, he was increasingly restless and traveled at home and abroad. It was in this mode that on 14 September 1895, Riley and his fourteen-year-old son mounted their bicycles and sped down the incline on Columbia Street in Washington, DC, toward Riley’s office. The front wheel of Riley’s bicycle struck a stone and he was thrown over the handlebars, striking his head on the pavement. He died that evening of a fractured skull. The news was flashed by telegraph the next day. The entomological world was shocked by the untimely death of the colorful, controversial leader who for three decades had been the discipline’s primary spokesman. He had been tireless in his effort to gain public understanding and support for entomology and to build the knowledge base that the discipline deserved in service to science and agriculture. Condolences and tributes poured in to the be-
reaved wife and six children. Some of the messages already reflected the view that their distinguished leader had not been fully appreciated in life. Entomological journals throughout the world followed with obituarists paying tribute to their fallen leader. Two brief examples from these numerous encomiums capture the essence of the man.

An acquaintance of his Missouri days observed that

Prof. Riley was too serious in his address and manner to win many warm and cordial friends. He could never forget his work... But we all learned to respect his personal worth and great ability. (Anonymous 1895)

A friend and colleague, the Dominion (Canada) entomologist James Fletcher, offered the simple tribute:

As an economic entomologist, take him all in all, he was far and away the most eminent that the world has ever seen. (Fletcher 1895).

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