pISSN: 0259-9996 – eISSN: 2783-3968

Journal of Entomological Society of Iran

2026, 46 (4) 471–475

Short Communication

Half-Built houses, ignoring a full-blown crisis: *Argas* spp. (Acari: Argasidae) emerging as a threat to urban health

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Abstract. The shift from rural to urban living conditions, coupled with growing housing demand, has led to the construction of substandard, unfinished buildings. These structures provide undesirable ecological niches for synanthropic wildlife and their ectoparasites, including *Argas* spp. Poultry or fowl ticks nest in the skeletons of high-rise buildings, abandoned villas, and stalled construction projects, and feed on hosts such as feral pigeons. When birds abandon their nests during prolonged construction delays, the ticks enter a dormant, starvation-induced state and may remain in the building infrastructure for years. After project completion and the onset of human habitation, hungry ticks emerge to feed on new residents, causing a range of health problems, including severe pruritus, papular dermatitis, respiratory illnesses, secondary infections, and potential transmission of zoonotic pathogens to new hosts. This neglected crisis reflects systemic failures in construction oversight, persistent project delays, and vague accountability. Preventive urban health management strategies should integrate pest risk assessments into building permit processes, implement structural measures to deter bird colonization, train healthcare professionals to recognize tick-borne dermatoses, and launch public education campaigns. Without these coordinated and proactive interventions, these abandoned structures will continue to contribute to an urban public health issue, with escalating physical, psychological, and economic costs.

Keywords: Acari, ticks, urban health

Article info
Received: 07 December 2025
Accepted: 24 September 2026
Published: 30 October 2026

Subject Editor: Ary Faraji

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DOI : https://doi.org/10.22034/jesi.46.4.7

We are writing to draw your attention to rapid urbanization across developing countries, which has brought with it predictable but often overlooked problems, such as the proliferation of substandard construction projects such as skeletal high-rise buildings, abandoned villas, and unfinished apartment complexes that serve as sources of public health threats. Among the most neglected of these threats is the *Argas* spp. tick, which has found permanent refuge in various parts of substandard buildings, gradually morphing into a complex environmental and epidemiological crisis (Zahid *et al.*, 2023). When building construction begins, the unprotected rooftops, hollow walls, unfinished ceiling voids, roof cavities, and electrical conduits of half-built structures become prime real estate for feral pigeons and other synanthropic birds seeking warm, dry, predator-free spaces to build their nests, lay eggs, and raise their young (Fig. 1). With the birds come their ectoparasites, such as *Argas* spp. (Farfán Aguilar *et al.*, 2022; Li et *al.*, 2024). This resilient arthropod, also known as the fowl tick or poultry tick, are extraordinary survivors, capable of enduring prolonged periods of starvation, sometimes up to several years, without a blood meal. This biological adaptation is precisely what makes them so dangerous in the context of construction delays. While the birds' nest, feed, and breed their chicks, the ticks feed on the blood of adult pigeons and their squabs, reproducing rapidly (Golshani *et al.*, 2022).

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Fig. 1: Unfinished building. A: Bird's nest B: *Argas* spp. detached from bird's nest

The critical moment of crisis arrives when the adult birds abandon the nest. With their primary blood source gone, the ticks do not simply die off or disperse naturally. Instead, they enter a state of quiescent starvation, resting within the halogen light fittings, junction boxes, and hollow conduits that riddle the unfinished structure. This is where the tragedy unfolds: when construction finally resumes and the building is completed, and new residents move into their long-awaited homes, they become the next meal for starving ticks (Kaplan *et al.*, 2024; Zahid *et al.*, 2021). As a result of tick bites, new settlers report relentless itching, especially at night when the ticks emerge from their hiding places to feed. The skin signs appear as clustered, inflamed papules that cause intense itching and secondary skin infections from scratching. Children, the elderly, and those with sensitive skin are particularly at risk for allergic reactions, hives, or even secondary bacterial infections such as impetigo (Haddad *et al.*, 2018).

The potential for these ticks to create zoonotic diseases is obvious. The parasite has been implicated in the transmission of several pathogens and is associated with tick-borne relapsing fever, caused by bacterial *Borrelia* species. In some regions, the ticks also serve as a vector for avian spirochetosis and even arboviruses that can affect humans, which can lead to chronic dermatitis, respiratory symptoms from inhaled allergens, and a significant reduction in quality of life (Bózsik *et al.*, 2026; Brar *et al.*, 2026). In addition to tick bites, the infestation is also transmitted through accumulated feces, shed shells, and decomposed bodies in cavities. When heating or air conditioning systems are turned on, airflow disperses these tiny particles, potentially causing asthma and allergic rhinitis. The decomposition of organic matter from the bodies inside the walls further attracts secondary pests such as carpet beetles, mold ticks, and even rodents, exacerbating the infestation (Wikel *et al.*, 2018; Namvar *et al.*, 2024).

To solve the problem, building permit processes should include mandatory pest risk assessments. Bird spikes, wire mesh barriers, and sealed electrical enclosures are suitable for this purpose. Meanwhile, health professionals should be trained to recognize the clinical signs of *Argas* spp. infestations and differentiate them from bedbug, scabies, or common dermatitis infestations. Public health campaigns should also educate citizens about the signs of bird habitation, such as pigeons in new buildings, and the need to use protocols for requesting a professional pest assessment before moving into new homes (Hornain *et al.*, 2025; Harris *et al.*, 2016; Akhoundi *et al.*, 2023). The proliferation of *Argas* spp. ticks in semi-built urban structures is a clear case of negligence and a public health crisis, reflecting inadequate oversight, delays, and ambiguity in the accountability of operators. The resulting physical illnesses, from dermatitis to other diseases, accompanied by profound psychological distress and high costs, highlight the failure of the responsible systems, not the individual homeowners. Addressing this growing threat requires a paradigm shift in urban development, moving from reactive pest control to coordinated and preventive measures. This requires incorporating pest risk assessments into building codes, implementing

temporary structural protections during construction delays, and educating health professionals and the public. Without such an approach, these homes will act as a catalyst for a full-blown, urban health emergency.

Author's Contributions

Nader Aghakhani: Conceptualization; methodology; visualization; draft preparation; **Samira Firooziyan**: project administration; investigation; final review and edit; supervision; **Aniroda Broomand:** formal analysis; draft preparation; final review and edit; **Sepideh Naseri**: visualization; final review and edit.

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Funding

This research received no external funding.

Data Availability Statement

Not applicable.

Acknowledgments

Not applicable.

Ethics Approval and Consent to Participate

Not applicable.

Conflict of Interest

The authors declare that they have no conflict of interests.

Generative AI statement

The authors declare that no Generative AI tools were used in the writing, analysis, or preparation of this manuscript.

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Citation: Aghakhani, N., Broomand, A., Naseri, S. & Firooziyan, S. (2026) Half-built houses, ignoring a full-blown crisis: *Argas* spp. Emerging as a threat to urban health. *J. Entomol. Soc. Iran*, 46 (4), 471–475.

DOI : https://doi.org/10.22034/jesi.46.4.7
URL: https://jesi.areeo.ac.ir/article_136454.html

pISSN: 0259-9996 – eISSN: 2783-3968

Journal of Entomological Society of Iran

2026, 46 (4) 471–475

خانه‌های نیمه‌کاره، بحرانی نادیده‌گرفته‌شده: کنه های جنس آرگاس به‌عنوان تهدیدی نوظهور برای سلامت شهری

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چکیده: مهاجرت گسترده از روستاها به شهرها و افزایش تقاضا برای مسکن، به احداث ساختمان‌های بی‌کیفیت و ناتمام دامن زده است. این سازه‌ها، شامل آسمان‌خراش‌های اسکلتی، ویلاهای متروکه و پروژه‌های ساختمانی تعطیل‌شده، جایگاه‌های اکولوژیکی ناخواسته‌ای برای حیات وحش هم‌زیست با انسان و انگل‌های آن‌ها فراهم می‌آورند. از مهم‌ترین این انگل‌ها کنه نرم از جنس آرگاس است که در حفره‌های محافظت‌نشده این بناها لانه‌گزینی کرده و عمدتاً از پرندگانی چون کبوترهای وحشی تغذیه می‌کند. اما هنگامی که پرندگان در نتیجه تأخیرهای طولانی در فرآیند ساخت‌وساز، آشیانه‌های خود را رها می‌کنند، کنه‌ها وارد مرحله خاموشی و گرسنگی می‌شوند و سال‌ها در زیرساخت‌های ساختمانی زنده می‌مانند. پس از اتمام پروژه و آغاز سکونت انسان، این کنه‌های گرسنه مجدداً فعال شده و از ساکنان جدید تغذیه می‌کنند که پیامدهایی چون خارش شدید، درماتیت پاپولار، بیماری‌های تنفسی، عفونت‌های ثانویه و انتقال بالقوه عوامل بیماری‌زای مشترک بین انسان و دام را به همراه دارد .این بحران مغفول‌مانده، نشان‌دهنده کاستی‌های نظام‌مند در نظارت بر ساخت‌وساز، تأخیر در تکمیل پروژه‌ها و ابهام در مسئولیت‌پذیری است. مدیریت پیشگیرانه سلامت شهری می‌تواند شامل الزام به ارزیابی خطر آفات در فرآیند صدور پروانه ساختمانی، به‌کارگیری موانع فیزیکی برای جلوگیری از استقرار پرندگان، آموزش متخصصان بهداشتی در زمینه تشخیص بیماری‌های پوستی ناشی از کنه، و اجرای کمپین‌های آگاهی‌بخشی عمومی باشد. بدون این مداخلات هماهنگ و پیشگیرانه، این سازه‌های متروکه همچنان به عنوان عاملی تشدیدکننده در بروز یک وضعیت اضطراری سلامت شهری با هزینه‌های فزاینده جسمی، روانی و اقتصادی باقی خواهند ماند.

کلمات کلیدی: آکاری، کنه، سلامت شهری

اطلاعات مقاله

دریافت: ۱۴۰۴/۰۹/۱۶

پذیرش: ۱۴۰۵/۰۷/۰۲

انتشار: ۱۴۰۵/۰۸/۰۸

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DOI : https://doi.org/10.22034/jesi.46.4.7

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