

平成31年度

群馬県立県民健康科学大学 診療放射線学部

社会人特別選抜試験問題

小 論 文

群馬県立県民健康科学大学

小論文試験問題 1

最近わが国では特定外来生物による環境破壊などの被害が問題化している。
特定外来生物ヒアリについて論じた次の記事を読んで、各問題に解答しなさい。

Fire ants, a venomous¹, highly invasive nonnative pest², have been spotted over the past few months in various parts of Japan, prompting the Environment Ministry to both warn the public to seek immediate treatment for stings and take measures to prevent further infestation. First detected June 9 in Amagasaki, Hyogo Prefecture, fire ants had been identified in 10 locations nationwide as of July 27, from Oita Prefecture to Shinagawa Ward, Tokyo. The ministry has confirmed one injury caused by a fire ant; a male worker in his 30s developed a rash on his left arm after being stung in a warehouse in Fukuoka on July 27.

Following is a look at why fire ants should be kept out of Japan:

What are the characteristics of fire ants?

They measure about 2.5 to 6 mm long, are reddish brown in color and have a venomous stinger on the tip of their deep-red abdomen. According to the ministry, fire ants originated in South America but have spread to more than 10 countries and territories worldwide, including the United States, Puerto Rico, Australia, China and Taiwan. Unlike Japan's domestic ant species, fire ants build domed hills 25 to 60 cm wide and 15 to 50 cm high. The invasive species law bans the import, transport or keeping of fire ants in Japan.

How dangerous are they?

The Environment Ministry had in the past said that about 100 people in the United States are killed each year by fire ants, printing this figure in a pamphlet titled "Stop the Fire Ant." However, the figure was not used in the pamphlet's current version. A ministry official told The Japan Times last week they couldn't find any evidence to back the figure up. Even so, (ア) the official stressed the importance of people steering clear of fire ants because it is possible to die from a sting. According to the Japanese unit of the International Union for the Study of Social Insects³, 129 people were hospitalized in Taiwan between 2012 and 2014 after being stung by fire ants, although no cases resulted in death. Fire ants can also threaten biodiversity⁴ and agriculture. The ministry says the species is "highly aggressive," killing and consuming insects, reptiles⁵ and even small mammals. Officials say fire ants can potentially kill livestock⁶, including cattle or horses. The International Union for Conservation of Nature⁷ considers fire ants one of the world's 100 worst invasive species that can drive other breeds to extinction, and do harm to human society. "They breed and spread rapidly and, if disturbed, can relocate⁸ quickly so as to ensure survival of the colony. Their stinging ability allows them to subdue prey and repel⁹ even larger vertebrate competitors from resources," says the union's database. They also proliferate quickly, with queens producing 800 to 2,000 eggs a day.

The economic impact of fire ants on humans, agriculture and wildlife in the United States was estimated at about "half a billion, if not several billion, dollars per year," according to a 2010 report

小論文試験問題 2

by the union. The agricultural impact includes damage to crops and workers, the report says, adding that if inhabited by fire ants, playgrounds may no longer be safe for children.

What happens when a person is stung?

According to the ministry, victims can experience anaphylaxis, a life-threatening allergic reaction with symptoms such as difficulty breathing, decrease of blood pressure and loss of consciousness. Milder symptoms can include breaking out in hives¹⁰ centered around the areas where stung. (イ) Victims may also experience acute pain similar to a burn. If conditions worsen after a rest of 20 to 30 minutes, it's best to visit a hospital and report being stung. If one encounters an army of fire ants, steer clear and contact the Environment Ministry or the prefectural department that handles pest extermination.

What measures are being taken by the government?

The Environment Ministry is urging early detection and extermination. According to the ministry, all fire ants spotted so far have been exterminated. The sites have been in Hyogo, Aichi, Osaka, Tokyo, Kanagawa, Fukuoka and Oita prefectures (Fig.1). The ministry has also begun a project to hunt down fire ants at 68 ports nationwide and is taking such measures as setting traps in areas within 2 km from the ports where they have previously been seen. The 68 ports regularly handle cargo from countries and territories where the ministry has confirmed that fire ants exist, including China and Taiwan. The government has also asked organizations involved in shipping to urge consignors¹¹ to take active measures, and boards of education¹² to teach students about the dangers posed by fire ants. Medical institutions and fire departments meanwhile have been informed by their prefectural governments about the appropriate treatment of victims.

1. venomous: 有毒な
2. pest: 害虫
3. the International Union for the Study of Social Insects: 国際社会性昆虫学会
4. biodiversity: 生物多様性
5. reptile: 爬虫類
6. livestock: 家畜
7. The International Union for Conservation of Nature: 国際自然保護連合
8. relocate: 移転する
9. repel: 撃退する; 寄せつけない
10. hives: じんましん
11. consignor: 荷主、荷送人
12. boards of education: 教育委員会

出典

Japan Times : 2017.8.7; “Japan working hard to douse fire ant invasion” by Daisuke Kikuchi
https://www.japantimes.co.jp/news/2017/08/07/reference/japan-working-hard-douse-fire-ant-invasion/#.WwUS_u7RCpo



【Fig. 1】

小論文試験問題 4

問題1 本文中に述べられているヒアリの形態的な特徴と巣の特徴について、それぞれ日本語で要約しなさい。

各10点 (計20点)

問題2 ヒアリの原産地と日本で最初に発見された地名を、日本語で書きなさい。

各5点 (計10点)

問題3 下線部(ア)および(イ)をそれぞれ和訳しなさい。

(ア)10点、(イ)15点 (計25点)

問題4 本文の内容と合致する選択肢をA～Eから1つ選び、記号で解答しなさい。
10点

- A. 日本において、これまでにヒアリによる死者1名が確認されている
- B. 台湾では2012年から2014年の間に、ヒアリによる129名の死者が出ている
- C. ヒアリの女王アリは1日あたり800～2,000個の卵を産む
- D. ヒアリは砂地を好まないため、日本に定着しても砂場で遊ぶ子供に危険はない
- E. 環境省は、日本の68都市で既にヒアリが定着し、もはや駆除は困難と認めた

問題5 本文およびFig.1を参照して、ヒアリが日本へ上陸・侵入した経路について推定し、あなたがそのように推定した理由を記述しなさい。

10点

問題6 本文を参考にして、特定外来生物から人間や環境を守るために必要な対策や私たちが心がけるべき点などについて、あなたの考えを自由に記述しなさい。

25点

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小論文試験問題 解答用紙1

受験番号	氏 名

問題1

【ヒアリの形態的な特徴】

【ヒアリの巣の特徴】

得点1

問題2

原産地： _____

日本で最初に発見された地名： _____

得点2

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小論文試験問題 解答用紙2

受験番号	氏名

問題3

(ア)

(イ)

得点3	
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問題4

得点4	
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小論文試験問題 解答用紙3

受験番号	氏名

問題5

得点5	
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問題6

※ 問題6の解答欄が足りない時は、次のページへ続けなさい。

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小論文試験問題 解答用紙4

受験番号	氏名

問題6 の続き

得点6	
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注 意 事 項

- 1 問題用紙は表紙を含めて5枚、解答用紙4枚、下書き用紙2枚、裏表紙（注意事項記載）1枚です。
- 2 解答用紙の所定の欄に、必ず受験番号・氏名を記入してください。
- 3 解答は、すべて解答用紙に記入してください。下書き用紙に解答を記入しても、採点の対象とはしません。また、解答用紙の「得点欄」には何も記入しないでください。
- 4 問題用紙・解答用紙に印刷不鮮明や汚れ等がある場合は、無言のまま手をあげて、監督員の指示に従ってください。
- 5 試験中に質問や用便等の用件がある場合も、無言のまま手をあげて監督員の指示に従ってください。
- 6 試験開始後、30分間は途中退室を認めません。
30分経過後、途中退室する場合は、監督員の指示に従い、解答用紙を監督員に提出したのち退室してください。
- 7 問題用紙及び下書き用紙は持ち帰ってください。
- 8 不正行為や、他の受験者に迷惑となる行為を行った場合は、失格とすることがあります。