

2024年度

帰国生入学試験

【 基礎学力検査 】

[英語] 問題

1. 問題および解答用紙は試験開始の合図があるまで開かないでください。
2. 解答はすべて解答用紙の所定の欄に記入してください。
3. 受験番号および氏名は解答用紙の所定の欄にそれぞれ記入してください。
4. 試験終了後、解答用紙を問題の上にふせて置いてください。
5. 回収するのは解答用紙だけです。問題は持ち帰ってください。
6. [英語]の問題は1ページから6ページまでです。

問題は次頁から

I 次の英文を読み、設問に答えなさい。

(* のついた語句には、本文の最後に注があります。)

When a mushroom hunter Terri Clements found a unique mushroom near her home in Arizona, she was not sure if it was a new species. So, she brought the mushroom to a laboratory and asked the professional researchers to *process the DNA from it and study the result. Later a scientist confirmed that it was a new species and her new mushroom species was *described *Morchella kaibabensis* in a scientific paper.

Clements was a restaurant owner and a *real estate executive before. After she retired in 2012, she became passionate about recording mushroom species by using traditional taxonomy—the science of describing, naming, and *classifying life on earth. “I had no scientific training, but now I spend hours and hours on it,” she says. “It’s like a full-time job, though I don’t get a salary.”

Clements’ situation is not special. ① For the last 30 years or so, these non-professionals have developed their own research skills, and now professional scientists are gradually welcoming these volunteers.

A 2012 study shows that non-professional taxonomists recorded more than 60 percent of the new species from 1998 to 2007. In the ocean, 40 percent of new *marine mollusks were discovered by non-professionals. New Zealand researchers say that the field of taxonomy has been getting stronger because of these non-professional scientists, even though *funding for professional scientists has been decreasing. There are fewer students who want to be taxonomists, but there are more and more non-professionals who are interested in this field, because nowadays they can find information much more easily online.

In some fields, the work done by non-professional taxonomists are as accurate as professional scientists. Philippe Bouchet is a *curator at the French National Museum of Natural History and an expert on marine mollusks. He often asks a network of volunteers to study material he collects from the ocean. One of the volunteers, Emilio Rolan, has described more ocean species than anyone else so far. He discovered his first new species in 1980 while he was working as a doctor for children. He named the *snail *Conus josephinae* after his wife. Over the next ten years, he got interested in taxonomy and learned techniques to study the species he found. He got a PhD in 1992, and after he retired in 1999, he published many scientific papers with the help of professional scientists like Bouchet. In total, he has described almost 1500 new species since 1980. He gets no salary for his work. His son says, “He’s doing his work in his free time and for fun, not for money. He cannot just spend time

sitting and watching TV.”

Sometimes non-professional taxonomists need more technical skills or tools. Jim McClarin often posts his discoveries to online groups of people who love *beetles. He was a New Hampshire carpenter before, but now lives in *Ecuador to study and photograph beetles. When he discovers a new beetle and cannot find out what it is, he emails photos to his professional scientist friends. “I can tell if it’s new to me, but I have to ask an expert whether it’s really a new species. They often say that it is something they have never seen,” he says. He has found a lot of new species so far.

Though there are many passionate non-professionals around the world, there are not so many students who study taxonomy to be professional researchers. After going into the jungle to find insects or searching for snails in a deep coral reef, they have to spend hours studying them to find out if it is really new. Even if it is a new species, the discovery of a new type of snail will not be so interesting to the world. ②Traditional taxonomy 【 other / may / so / like / attractive / not / as / popular fields / look 】 *genetic studies or *biodiversity.

However, as we can see from Clements’ experience in the field of mushroom taxonomy, even non-professional scientists can use DNA research now. In fact, last year the North American Mycoflora Project began to give funding to non-professional mushroom researchers around the country for DNA research. Since scientists don’t have time to do all that work, the project wants non-professionals not only to collect and send out samples to professionals, but also to learn how to study samples with DNA research and understand the results.

③“Classifying the new species is important when ecosystems are quickly losing biodiversity,” says Bill Sheehan, president of the project. “If a species doesn’t have a name, it is impossible to protect it or to know that it is in danger. Biology starts with understanding what a species is, and taxonomical studies often leads to important questions about how *evolution works.”

注)

process the DNA : DNA を抽出する

describe(d) : 記載する (ある生物の特徴を言葉や図、写真等で記述すること)

real estate executive : 不動産経営者 classify(ing) : 分類する

marine mollusk(s) : 海洋軟体動物 funding : 助成金 curator : 学芸員

snail : 巻貝 beetle(s) : 甲虫 (カブトムシ、クワガタなど)

Ecuador : エクアドル (南米の国) genetic studies : 遺伝子学

biodiversity : 生物多様性 evolution : 進化

問1 次の質問の答えになるように、() に適切な語を入れなさい。

Question : What is *Morchella kaibabensis*?

Answer : It is a name () to the mushroom species Terri Clements discovered.

問2 Which is true about Terri Clements?

- ア She processes the DNA from the mushroom she found and studies the result.
- イ She became passionate about mushroom species when she was a restaurant owner.
- ウ She had a scientific training in traditional taxonomy at university.
- エ She spends a lot of time recording mushroom species even though she is not paid for it.

問3 空欄 ① には以下の4つの英文が入ります。本文の内容に合うように正しい順番に並べなさい。

- ア Many of them study rare species like mushrooms, insects and other small creatures.
 - イ Therefore, there are not enough professional researchers who study them.
 - ウ There are many others who are doing the same in each of their favorite areas.
 - エ Those species are less popular than birds, butterflies and flowers.
- () → () → () → ()

問4 Why do New Zealand researchers say that the field of taxonomy has been getting stronger?

- ア Non-professionals supported professionals to record 60 percent of the new species from 1998 to 2007.
- イ 40 percent of new marine mollusks were found by non-professionals in the oceans around New Zealand.
- ウ The number of non-professionals who are interested in the field of taxonomy is increasing.
- エ Non-professionals can attend online taxonomy courses at universities around the world.

問5 “Emilio Rolan” についてまとめた文になるように、空欄（ A ）～（ H ）に入る適切な語を下のア～セから選び、記号で答えなさい。同じ記号は一度しか使えません。また、文頭に来る語も小文字で示してあります。

Emilio Rolan is one of the (A) who help Philippe Bouchet. Emilio is sometimes asked to study the creatures Phillippe (B) from the ocean. Emilio himself describes new ocean species, too. His first (C) was in 1980. He found a new species of snail and gave it the name of his (D). After that he studied (E) and techniques for studying new species. After he retired as a (F) in 1999, he studied new ocean species more eagerly. (G) scientists have helped him publish many scientific papers. The (H) number of new species he has described is about 1500. He does not get a salary for his work, because he is doing it just for fun.

ア total	イ curators	ウ non-professionals	エ wife	オ researcher
カ doctor	キ find	ク history	ケ discovers	コ taxonomy
サ professional	シ museum	ス discovery	セ increasing	

問6 Which is true about Jim McClarin?

- ア He made popular online groups for people who want to know about beetles.
- イ He is a professional taxonomist who studies and photographs beetles in Ecuador.
- ウ He lives in New Hampshire and often emails beetle photos to his scientist friends.
- エ He has professional scientist friends who answer his questions about new species.

問7 Which is NOT true as a reason why there are fewer students who study taxonomy to be professional researchers?

- ア There are already many passionate professional researchers around the world.
- イ The discovery of a new small creature may not draw so much attention from the world.
- ウ It takes a lot of time to check if the species they found is really new.
- エ They have to spend hours in jungles or deep coral reefs to find new species.

問8 下線部②が「伝統的な分類学は、遺伝子学や生物多様性のような他の人気のある分野ほど魅力的に見えないかもしれない」という意味になるように、【 】内の語(句)を並べ替えなさい。

II 下線部①～③の日本語を英語に直しなさい。

In the late 1800s, a teacher named Wilhelm von Osten became famous when he showed his horse's excellent skill to people. ①クレバー・ハンスとして知られるその馬は、足踏みによって、簡単な数学の問題に対する答えを示したのだ。

While the audience believed the performance, a smart researcher noticed the trick behind this clever horse. He explained that Clever Hans watched reactions from both his owner and his audience and knew when to stop stepping. He was a smart horse, but counting was never really one of his skills.

②彼の能力は本物ではなかったものの、それ以来、研究者たちは多くの動物に数を数える能力があることを発見してきた。 For example, studies have shown that dogs can count the number of treats, and can count up to four or five. Imagine that you put four treats in front of a dog, and then you hide them behind a screen. ③もしそのおやつの中の1つを取って仕切りを外すと、犬はおやつが1つ消えたことに気付くだろう。

【以下余白】

