

I

- (1) ・水面で生じる光の屈折を補正して獲物に向かって水を噴射する。
 - ・噴射した水が獲物に当たる直前に最大の力を発揮できるように獲物との距離を測る。
 - ・獲物がどのような動きのパターンをとる場合でも、獲物に水を命中させる。

- (2) ミツバチは本当の意味での脳を持っておらず、あるのはおよそ 96 万個のニューロンであり、そのニューロンの密度は昆虫の中では群を抜いているものの一つではあるが、その数は脊椎動物の脳と比べるとはるかに少ない。にもかかわらず、高度な認知や学習を可能にしているという意味。

- (3) いずれにしても、哺乳動物のそれと比べてはるかに小さなミツバチの脳が、哺乳動物に相当する認知過程、あるいは少なくともその遂行にとって根本的な足枷になっているようには見えない。哺乳動物とミツバチの類似は驚くべきものではあるものの、それを相同の神経の発達に帰着させることはできない。ミツバチの神経構造がわからないままである限り、私たちは両者の類似の原因を確定することはできないのだ。

II

- (1) 現在のアメリカ合衆国東海岸は、先史時代にははるかに海水面が低く、例えばフロリダでは陸地が現在の 2 倍もあった。インディアンが狩猟の対象としていた大型の陸上動物が絶滅すると、今度は淡水と海水による豊かな生態系が彼らの生活資源となり、諸部族の社会は沿岸部を中心に営まれることとなった。しかしながら、その後海水面が上昇したため、現在では考古学的証拠の多くが海中に没してしまっているから。

- (2) 現在のアメリカ合衆国東海岸の沿岸部に定着した初期のインディアン諸部族は、水、燃料、食料源、気候の点でおおむね恵まれており、魚や狩りの獲物、運任せに得られる木の実やベリー類を求めて、150 人程度からなる小規模の集落を形成しながら、沿岸部と内陸部の間で移住を繰り返していたと考えられるから。

Ⅲ

[解答例 1]

In my college days, I didn't have much money, so I sacrificed a lot in order to buy records. I listened to these records so many times that I practically wore them out, and I could call to mind the titles and lyrics of all the songs in those records. But now I have numerous CDs and downloaded music which I bought online, and a lot of these pieces of music I've never even listened to. I sometimes buy the same music again, not remembering I already have it. I fully realize that it is when we have little that we treasure what we have.

[解答例 2]

When I was a student, I was so poor that I would listen again and again to the record I bought with what little money I had. I learned the titles of the songs and the lyrics by heart. On the other hand, I am now surrounded by so many kinds of CDs and downloaded songs I bought online, not all of which I have listened to even once. It sometimes happens that without realizing it, I buy the same music which I already have. It is said that we cherish just those things which are difficult to get. Now, I cannot agree with this idea more.

IV

[解答例 1]

To whom it may concern,

I am a Japanese university student hoping to study at your university next year. I was wondering if you would be so kind as to answer some questions about scholarships. I would like to know if there are any scholarships available to Japanese students in particular and what kind of other scholarships might be suitable to me. In each case, would you please let me know what the qualifications are, and how much money is offered? Of course, if there are any websites with suitable information, please direct me to those; I don't want to bother you needlessly.

I would be most grateful for whatever you can tell me, and I thank you in advance for your kind attention.

Best regards,

Y. Yoshida

[解答例 2]

To whom it may concern,

I'm a university student in Japan. I am thinking about transferring to your university next year, because your curriculum perfectly suits the career I hope to start after graduation. I was wondering if you could give me some information about scholarships that might be available to overseas students. What I would like to know is as follows:

- (1) What kinds of scholarships you may offer.
- (2) What requirements should be met to apply for it.
- (3) What the deadline is for submitting an application.

I would be grateful for whatever information you can supply me with, and I thank you in advance.

Best regards,

Y. Yoshida