

入学試験問題



外国語 (英語)

(配点 120 点)

平成 25 年 2 月 26 日 14 時—16 時

注意事項

- 1 試験開始の合図があるまで、この問題冊子を開いてはいけません。
- 2 この問題冊子は全部で 39 ページあります。落丁、乱丁または印刷不鮮明の箇所があったら、手を挙げて監督者に知らせなさい。
- 3 解答には、必ず黒色鉛筆(または黒色シャープペンシル)を使用しなさい。
- 4 解答用紙の指定欄に、受験番号(表面 2 箇所、裏面 1 箇所)、科類、氏名を記入しなさい。指定欄以外にこれらを記入してはいけません。
- 5 解答は、必ず解答用紙の指定された箇所に記入しなさい。
- 6 第 3 問は聞き取り問題です。問題は試験開始後 45 分経過した頃から約 30 分間放送されます。
- 7 解答は、5 問を越えてはいけません。
- 8 5 問全部英語の問題を解答してもよいし、また、第 4 問、第 5 問の代わりに 28 ページ以下にある他の外国語の問題第 IV 問、第 V 問を選んでよい。ただし、第 IV 問と第 V 問とは必ず同じ外国語の問題でなければいけません。
- 9 解答用紙裏面上方の指定された()内に、その紙面で解答する外国語名を記入しなさい。
- 10 解答用紙裏面の上部にある切り取り欄のうち、その紙面で解答する外国語の分のみ 1 箇所だけ正しく切り取りなさい。
- 11 解答用紙の解答欄に、関係のない文字、記号、符号などを記入してはいけません。また、解答用紙の欄外の余白には、何も書いてはいけません。
- 12 この問題冊子の余白は、草稿用に使用してもよいが、どのページも切り離してはいけません。
- 13 解答用紙は、持ち帰ってはいけません。
- 14 試験終了後、問題冊子は持ち帰りなさい。

草 稿 用 紙

(切り離さないで用いよ。)

英 語

- 1 (A) 次の英文の内容を, 70~80 字の日本語に要約せよ。句読点も字数に含める。

The silk that spiders use to build their webs, trap their prey, and hang from the ceiling is one of the strongest materials known. But it turns out it's not just the material's exceptional strength that makes spiderwebs so durable.

Markus Buehler, an associate professor of civil and environmental engineering, previously analyzed the complex structure of spider silk, which gains strength from different kinds of molecular interactions at different scales. He now says a key property of the material that helps make webs strong is the way it can soften at first when pulled and then stiffen again as the force increases. Its tendency to soften under stress was previously considered a weakness.

Buehler and his team analyzed how materials with different properties, arranged in the same web pattern, respond to localized stresses. They found that materials with simpler responses perform much less effectively.

Damage to spiderwebs tends to be localized, affecting just a few threads—the place where a bug got caught and struggled around, for example. This localized damage can be repaired easily or just left alone if the web continues to function adequately. “Even if it has a lot of defects, the web still functions mechanically virtually the same way,” Buehler says.

To test the findings, he and his team literally went into the field, pushing and pulling at spiderwebs. In all cases, damage was limited to the immediate area they disturbed.

This suggests that there could be important advantages to materials whose responses are complex. The principle of permitting localized damage so that an overall structure can survive, Buehler says, could end up guiding

structural engineers. For example, earthquake-resistant buildings might bend up to a point, but if the shaking continued or intensified, specific structural elements could break first to contain the damage.

That principle might also be used in the design of networked systems: a computer experiencing a virus attack could shut down instantly, before its problems spread. So the World Wide Web may someday grow more secure thanks to lessons learned from the spidery construction that inspired its name.

注：molecular=molecule(分子)の形容詞形

草稿用紙

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(B) 次の空所 (1) ~ (5) に入れるのに最も適切なものを 8 ページに記したア〜クより選び、その記号を記せ。ただし、同じ記号を複数回用いてはならない。

It's sometimes said that human beings live two lives, one before the age of five and another one after, and this idea probably stems from the enormous amount of time which those first five years of our lives contain. It's possible that we experience as much time during those years as we do during the seventy or more years which come after them.

It seems that during the first months of our lives we don't experience any time at all. According to the research of the psychologist Jean Piaget, during the first months of our lives we live in a state of 'spacelessness', unable to distinguish between different objects or between objects and ourselves. We are fused together with the world, and we don't know where we end and where it begins. We also experience a state of timelessness, since—in the same way that we can't distinguish between objects—we can't distinguish one moment from the next. We (1).

We only begin to emerge from this timeless realm as our sense of separation begins to develop. According to Piaget, this begins at around seven months. We start to become aware of ourselves as separate entities, apart from the world, and also to perceive the separation between different objects. Along with this, we begin to be aware of separation between different events. We (2), encouraged by the development of language, with its past, present, and future tenses. According to Piaget, this process follows four stages. First, we recognise that people arrive and events begin; second, we recognise that people leave and events end; third, we recognise that people or objects cover distances when they move; fourth, we become able to measure the distance between different moving objects or people—and at this point we have developed a sense of sequential time.

After this point of ‘falling’ into time, we (3). If the sense of sequence is the result of our development of a separate sense of self, we can probably assume that the more developed our sense of self becomes, the more developed the sense of sequence will be. As a result, time will seem to move faster. This sense of time speeding up isn’t something that we just experience as adults; it probably happens from early childhood onwards. Time may pass for a two-year-old child, but probably only at an incredibly slow speed. But as the child’s sense of self becomes more developed, the speed of time increases, too. Time probably moves faster to a child of four than it does to a child of three, and faster to a child of seven than it does to a child of six.

However, even at this age time passes many times more slowly than it does for adults. This is why, as any parent knows, young children (4). Primary-school teachers should be mindful of this when their pupils’ attention starts to wander — what seems to be a fairly short 40-minute lesson to them is stretched many times longer to the children.

Young children’s sense of time is not yet fully developed in other ways, too. They can’t accurately guess how long events last — in fact, they only become able to do this in terms of seconds at the age of six or seven. They (5). When children between the age of two and four talk about what they have done, or retell the story of something that’s happened to them, they almost always mix up the order of the events, usually grouping them together in terms of association rather than sequence.

- ア can only speak in the present tense
- イ become more and more subject to it
- ウ begin to rank the importance of events
- エ don't know when an event begins or when it ends
- オ don't have a clear sense of the sequence of past events, either
- カ develop a sense of sequential time, a sense of the past and future
- キ encounter many new things every minute but still retain a sense that each event is unique
- ク always think that more time has gone by than actually has, and often complain that things are taking too long

草 稿 用 紙

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- 2 (A) 下に示す写真の左側の人物を X, 右側の人物を Y として, 二人のあいだの会話を自由に想像し, 英語で書け。分量は全体で 60~70 語程度とする。どちらが話しているかわかるように, 下記のように記せ。X と Y のどちらから始めてもよいし, それぞれ何度発言してもよい。

X : ----- Y : ----- X : -----
Y : -----



草 稿 用 紙

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(B) これまで学校や学校以外の場で学んできたことの中で、あなたが最も大切だと思うことは何か、またそれはなぜか。50～60 語の英語で答えよ。ただし、英語に関すること以外について述べること。

草 稿 用 紙

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3 放送を聞いて問題 (A), (B), (C) に答えよ。

注 意

- ・ 聞き取り問題は**試験開始後 45 分経過した頃から約 30 分間**放送される。
- ・ 放送を聞きながらメモを取ってもよい。
- ・ 放送が終わったあとも、この問題の解答を続けてかまわない。

聞き取り問題は大きく三つに分かれている。(A)は独立した問題であるが、(B)と(C)は内容的に連続している。(A), (B), (C)のいずれも二回ずつ放送される。

(A) これから放送する講義を聞き、(1)～(5)の問いに対して、それぞれ正しい答えを一つ選び、その記号を記せ。

(1) What does the speaker say about the concept of “home”?

- ア It emerged slowly over time.
- イ It is a way our minds organize space.
- ウ It is an instinctive part of human nature.
- エ It is actually the same as the concept of “not-home.”

(2) When the speaker returned home from a stay at a friend’s house, how had his perception of his home changed?

- ア His home now seemed alien.
- イ His perception of his home had not changed.
- ウ It seemed as if something were missing from his home.
- エ He noticed things in his home he had never noticed before.

(3) According to the speaker, which of the following is correct?

- ア The longer you stay somewhere, the more likely it will become your home.
- イ It is the atmosphere of a place, not the length of time you spend there, that makes you feel at home.
- ウ Even if you live in a place for twenty or thirty years, you might still feel that your home is somewhere else.
- エ You may feel at home anywhere in the world after staying there for a while, but that's just because you have started to forget your real home.

(4) Which of the following is mentioned as an example of a permanent loss of home?

- ア Migration to a new place.
- イ The death of a homeowner.
- ウ Going to live with another family.
- エ Seeing your home as a stranger sees it.

(5) According to the speaker, which of the following describes the concept of home in today's world?

- ア It seems to be losing its value.
- イ It seems threatened by many forces.
- ウ It seems to be changing its meaning.
- エ It seems even more important than it used to be.

(B) これから放送するのは、ある国の議会でなされた発言の様態である。これを聞き、(1)～(5)の問いに対して、それぞれ正しい答えを一つ選び、その記号を記せ。

(1) According to Dr. Lago, which of the following has been a cause of her country's economic decline?

- ア Its tax system.
- イ Its trade treaties.
- ウ Its business models.
- エ Its agricultural practices.

(2) Based on Dr. Lago's account of her country's past, which of the following periods saw the greatest economic prosperity?

- ア 1940s-1950s.
- イ 1960s-1970s.
- ウ 1980s-1990s.
- エ Since 2000.

(3) In some deep sea fields, how much of the ocean floor do polymetallic nodules cover?

- ア Over seventy percent.
- イ Over seventeen percent.
- ウ As much as seventy percent.
- エ As much as seventeen percent.

(4) In addition to valuable metals, what other ocean resource(s) does Dr. Lago encourage her country to develop?

ア Heat.

イ Bacteria.

ウ Oil and gas.

エ Tidal power.

(5) Why does Dr. Lago think her country is in a good position to succeed at deep sea mining?

ア Because it is near the ocean.

イ Because it has advanced robot technology.

ウ Because it has a good shipbuilding industry.

エ Because it has a strong onshore mining industry.

(C) これから放送するのは、(B)に続く議論である。これを聞き、(1)～(5)について、放送の内容と一致するように、それぞれ正しい答えを一つ選び、その記号を記せ。

(1) Representative Passy wants to know more about

- ア who owns the resources.
- イ where to find the resources.
- ウ how to obtain the resources.
- エ what the potential value of the resources is.

(2) Representative Schoene wants to know

- ア if the resources can be easily located.
- イ if the technology exists to collect the resources.
- ウ if deep sea mining will damage the environment.
- エ if his country has the right to mine the resources.

(3) What is the most important concern raised about the International Seabed Authority?

- ア It is subject to the United Nations.
- イ Its decisions may not be accepted by everyone.
- ウ It might be influenced by a few large countries.
- エ It has not yet developed guidelines to regulate deep sea mining.

(4) What does Representative Acklyte warn about the long-term effect of destroying the areas around hydrothermal vents?

- ア The long-term effect is unknown.
- イ The ocean food chain will be upset.
- ウ The sea floor will become less fertile.
- エ The marine environment will become more polluted.

(5) Based on Dr. Lago's reply to Representative Acklyte, one can conclude that Dr. Lago thinks _____ (A) _____ is more important than _____ (B) _____.

- ア (A) providing jobs
(B) protecting the environment
- イ (A) developing technology
(B) studying biological systems
- ウ (A) what's happening here on land
(B) developing deep sea resources
- エ (A) developing her country's economy
(B) respecting international law

- 4 (A) 次の英文の (1) ~ (3) の括弧内の単語を並べ替えて、文脈上意味が通るよ
うに文を完成させ、2 番目と 4 番目にくる語の記号を記せ。

Personal ⁽¹⁾(ア fuel, イ information, ウ is, エ powers, オ that, カ the) online social networks, attracting users and advertisers alike, and operators of such networks have had a largely free hand in how they handle it. But a close look is now being ⁽²⁾(ア all, イ at, ウ taken, エ that, オ the, カ way) information is collected, used, and protected, and it has been found that operators have repeatedly left personal data unprotected, exposing users to all sorts of risks. Not surprisingly, the claim of many operators is that they are following existing laws and that more regulation is unnecessary, even counterproductive. They argue, for example, that users who face a lot of detailed questions about ⁽³⁾(ア access, イ how, ウ their, エ they, オ to, カ want) information controlled before they even start using a service may become confused and make poor privacy choices. Nevertheless, it seems likely that the industry's management of private data will have to change before long.

(B) 次の英文の下線部(1)と(2)を和訳せよ。ただし、(1)については their current ones の内容がわかるように訳せ。また下線部(3)について、そこで使われているたとえば具体的に何を言おうとしているのか、その内容をわかりやすく 30~40 字で説明せよ。句読点も字数に含める。

A general limitation of the human mind is its imperfect ability to reconstruct past states of knowledge or beliefs that have changed. Once you adopt a new view of the world (or of any part of it), you immediately lose much of your ability to recall what you used to believe before your mind changed.

Many psychologists have studied what happens when people change their minds. Choosing a topic on which people's minds are not completely made up — say, the death penalty — the experimenter carefully measures the subjects' attitudes. Next, the participants see or hear a persuasive message either for or against it. Then the experimenter measures their attitudes again; those attitudes usually are closer to the persuasive message that the subjects were exposed to. Finally, the participants report the opinion they held beforehand. This task turns out to be surprisingly difficult. ⁽¹⁾Asked to reconstruct their former beliefs, people repeat their current ones instead — an instance of substitution — and many cannot believe that they ever felt differently. ⁽²⁾Your inability to reconstruct past beliefs will inevitably cause you to underestimate the extent to which you were surprised by past events.

Because of this “I-knew-it-all-along” effect, we are prone to blame decision-makers for good decisions that worked out badly and to give them too little credit for successful moves that appear obvious only after the fact. When the outcomes are bad, people blame their decision-makers for not seeing the signs, forgetting that ⁽³⁾they were written in invisible ink that became visible only afterward.

5 次の文章を読み、以下の問いに答えよ。

When I was eleven, I took violin lessons once a week from ⁽¹⁾a Miss Katie McIntyre. She had a big sunny fourth-floor studio in a building in the city, which was occupied below by dentists, paper suppliers, and cheap photographers. It was approached by an old-fashioned lift that swayed dangerously as it rose to the fourth floor, which she shared with the only (2a) occupant, Miss E. Sampson, a spiritualist who could communicate with the dead.

I knew about Miss Sampson from gossip I had heard among my mother's friends. The daughter of a well-known doctor, she had gone to Clayfield College and been clever and popular. But then her gift appeared — that is how my mother's friends put it, just declared itself out of the blue, without in (2b) way changing her cleverness or good humour.

She came to speak in the voices of the dead: little girls who had been murdered in suburban parks, soldiers killed in one of the wars, lost sons and brothers. Sometimes, if I was early for my lesson, I would find myself riding up with her. Holding my violin case tightly, I pushed myself hard against the wall of the lift to make room for ⁽³⁾the presences she might have brought into the lift with her.

It was odd to see her name listed so boldly — “E. Sampson, Spiritualist” — in the entrance hall beside the lift, among the dentists, photographers, and my own Miss McIntyre. It seemed appropriate, in those days, that music should be separated from the everyday business that was being carried on below — the whizzing of dentists' drills and the making of passport photos for people going overseas. But I thought of Miss Sampson, for (2c) her sensible shoes and businesslike suits, as a kind of fake doctor, and was sorry that ⁽⁴⁾Miss McIntyre and classical music should be associated with Miss Sampson and with the troops of sad-eyed women (they were mostly women) who came all the way to her room and shared the last stages of the lift with us: women whose husbands might

have been bank managers — wearing smart hats and gloves and tilting their chins a little in defiance of their having at last reached this point; other women who worked in hospital kitchens or offices, all decently gloved and hatted now, but ⁽⁵⁾looking scared of the company they were in and the heights to which the lift brought them. They tried to hang apart, using their elbows in a ladylike way, but using them; and saying politely “Pardon,” or “I’m so sorry,” when the crush brought them too close.

On such occasions the lift, loaded to capacity, made heavy work of it. And it wasn’t, I thought, simply the weight of bodies (eight persons only, a notice warned) that made the old mechanism grind in its shaft, but the weight of all that sorrow, all that hopelessness and last hope, all that dignity in the privacy of grief. We went up slowly.

Sometimes, in the way of idle curiosity (if she could have had such a thing), Miss Sampson would let her eyes for a moment rest on me, and I wondered hotly what she might be seeing beyond a small eleven-year-old. Like most boys of that age I had much to conceal. But she appeared to be looking at me, not through me. She would smile, I would respond, and, clearing my throat to find a voice, I would say in a well-brought-up manner that I hoped might fool her and ⁽⁶⁾leave me alone with my secrets, “Good afternoon, Miss Sampson.” Her own voice was as unremarkable as an aunt’s: “Good afternoon, dear.”

It was therefore ⁽⁷⁾all the more alarming, as I sat waiting on one of the chairs just outside Miss McIntyre’s studio, while Ben Steinberg, her star pupil, played the Max Bruch, to hear the same voice, oddly changed, coming through the half-open door of Miss Sampson’s office. Though much above the breathing of all those women, it had stepped down a tone — no, several — and sounded as if it were coming from another continent. It was an Indian, speaking through her.

It was a being I could no longer think of as the woman in the lift, and I was reminded of something I had once seen from the window of a railway carriage as my train sat steaming on the line: three old men behind the glass of a waiting

room and the enclosed space shining with their breathing like a jar full of fireflies. It was entirely real, but the way I saw them changed that reality, making me so impressionably aware that ⁽⁸⁾I could recall details I could not possibly have seen at that distance or with the naked eye: the greenish-grey of one old man's eyes, and a stain near a shirt collar. Looking through into Miss Sampson's room was like that. I saw too much. I felt dizzy and began to sweat.

There is no story, no set of events that leads anywhere or proves anything — no middle, no end. Just a glimpse through a half-open door.

(1) 下線部 (1) にある不定冠詞の a の用法と同じものを次のうちから一つ選び、その記号を記せ。

- ア The car in the driveway looked like a Ford.
- イ All who knew him thought he was an Edison.
- ウ A Johnson came to see you while you were out.
- エ At that museum I saw a Picasso for the first time.
- オ She was an Adams before she married John Smith.

(2) 空所 (2a), (2b), (2c) を埋めるのに最も適切な単語を次のうちから一つずつ選び、その記号を記せ。

- | | | | | |
|--------|-----------|---------|-------------|---------|
| ア all | イ another | ウ any | エ different | オ every |
| カ no | キ none | ク other | ケ same | コ some |
| サ that | シ those | ス what | セ which | |

(3) 下線部 (3) と最も意味が近い、2 語からなる別の表現を文中から抜き出して記せ。

(4) 下線部 (4) の意味に最も近いものを次のうちから一つ選び、その記号を記せ。

ア Miss McIntyre and classical music should be involved in Miss Sampson's business

イ Miss McIntyre and classical music should be influenced by someone like Miss Sampson

ウ Miss McIntyre and classical music should be looked down on even more than Miss Sampson was

エ Miss McIntyre and classical music should be coupled with someone as unrespectable as Miss Sampson

オ Miss McIntyre and classical music should be considered to be as unprofessional as Miss Sampson

(5) 下線部 (5) の意味に最も近いものを次のうちから一つ選び、その記号を記せ。

ア seeming frightened of the other women in the lift and of how high the lift was rising

イ looking fearfully at the other women in the lift, which went up to the fourth floor

ウ showing their fear of the unfamiliar women in the lift, which brought them to a high floor

エ looking anxiously at the other passengers in the lift, frightened because the lift seemed to go up forever

オ apparently feeling frightened of the company which employed them and the heights to which the unsteady lift rose

(6) 下線部(6)の意味として、最も適切なものを次のうちから一つ選び、その記号を記せ。

- ア hide my feeling of guilt
- イ let me enjoy being alone
- ウ assure her of my good manners
- エ keep her from reading my mind
- オ prevent her from telling others my secrets

(7) 下線部(7)の表現がここで用いられている理由として、最も適切なものを次のうちから一つ選び、その記号を記せ。

- ア Because Miss Sampson usually spoke in a mild voice.
- イ Because Ben Steinberg heard the same voice oddly changed.
- ウ Because more and more people were afraid of Miss Sampson's voice.
- エ Because the piano in Miss McIntyre's studio sounded as if it were far away.
- オ Because Miss Sampson could be heard more easily than all the other women.

(8) 下線部(8)を和訳せよ。

草 稿 用 紙

(切り離さないで用いよ。)

(A)

When did the concept of “home” become so important to the human mind? Is our sense of home instinctive? That is, are we programmed by nature to attach special meaning to a particular place, as if it were somehow part of us? Or is “home” a concept that slowly emerged after our ancestors stopped wandering and adopted a settled way of life? We don’t know the answers to those questions yet. But whatever home was originally, it’s now a way of organizing space in our minds. Home is home, and everything else is not-home. That’s the way our world is constructed.

Homesick children know how sharp the boundary between home and not-home can be, because they suffer from the difference. I know because I was one of them. In the small town where I grew up, I usually felt close to everything. Then, at the age of eight, I went to spend the night with a friend who lived a few blocks away. As we lay in our beds and I listened to the cars going by and the wind blowing through the trees, the town around me seemed alien. Something was missing. Something was wrong. And yet, when I returned home the next morning, it was as if nothing had happened. Home was just as it always was. And that’s the point: Home is a place so familiar that you don’t even notice it. It’s everywhere else that takes noticing.

The ease of travel has made the concept of home more complicated. If you visit Tahiti or Bangalore or Vancouver, after a few days you may say that you have started to feel at home. But that just means that the not-homeness of the place has decreased since you first arrived. There’s a big difference between feeling at home and being home. If you continue to live there for a year or two, at some point the place might really become your home. Or you might live there for decades and still miss your true home far away.

Just as we can sometimes gain a new home, it’s also possible to lose our homes. Sometimes that loss is only temporary. Perhaps you remember a moment, coming home from a trip, when the house you call home looked like just another house on a street full of houses. For a fraction of a second, you could see your house as a stranger might see it. But then the illusion faded and your house became home again. Home is a place we can never see with a stranger’s eyes for more than a moment.

Home can also be lost forever. When my grandfather died, my parents and I went to his house, as we had done so many times before. Everything looked the same as

when he had been alive, but everything was different. It was as though something had vanished from every object in the house. They had become mere objects. The person whose heart and mind could bind them into a single thing had gone. That house was no longer a home.

Today's world is marked by extraordinary mobility and change. Yet, despite these changes, or perhaps because of them, the idea of home seems more important than ever. Whether the concept of home is instinctive or created, nothing is more natural to our minds than to try to make ourselves at home in the world.

(B)

Committee Chair: Good afternoon, members of parliament and ladies and gentlemen.

I would like to begin the March 2012 meeting of the Economic Development Committee. Today, Dr. Chantelle Lago will make a presentation on behalf of the Natural Resources Industry Council. Dr. Lago, would you please begin?

Lago: Thank you, Mr. Chairperson. It's a great honor to speak before the committee today.

As you know, our country's economy has been declining over the past ten years. Unemployment has been rising, while exports, business profits, and tax revenues have been falling. This trend is partly due to global circumstances beyond our control, but it is also the result of our aging industries and out-of-date business models. Twenty or thirty years ago, an economic policy based on agriculture and shipbuilding raised our country to its highest level of prosperity and made it one of the richest in the region. But today we face severe competition from countries with cheaper labor. We are not likely to regain our advantage in those areas, so we must find a new engine of economic growth.

Today, I want to call your attention to a source of development that could revive our economy. I'm referring to the vast natural resources that lie beneath the surface of the ocean. Over seventy percent of our planet is covered with water. But, ironically, we know less about those deep sea environments than we do about the surface of the moon. What we do know, however, suggests that great wealth is waiting for those who have the vision and ability to harvest it. Let me give just two examples.

First, the bottom of the sea has huge fields of what are called polymetallic nodules. Polymetallic nodules are rocks, each about the size of a potato, that contain rich concentrations of nickel, aluminum, zinc, gold, silver, and platinum. These fields are usually located at depths of four to six kilometers, where nodules sometimes cover as much as seventy percent of the ocean floor.

Even more exciting are the areas around what are called hydrothermal vents. These are openings in the ocean floor through which hot water, rich in valuable metals, is shot into the ocean. As the water cools, it covers the seabed with high quality metals, including copper, lead, silver, zinc, and gold. In addition to precious metals, these vents also generate heat that could be captured and used as energy to reduce our consumption of oil, gas, and nuclear power. Undersea exploration is just beginning, but hundreds of these vents have already been discovered.

With our advanced shipbuilding industry, we are in a unique position to capture the mineral and energy resources waiting for us at the bottom of the sea. On behalf of the Natural Resources Industry Council, I urge the government to spend money now so that we can develop the ships, robots, and other technology needed to harvest those resources. If we lead the way in this industry, the riches of the ocean will make our country rich again.

Thank you for your attention.

(C)

Chair: Now I'd like to open the discussion among the members of the committee. Representative Passy, would you like to begin?

Passy: Thank you, Mr. Chairperson. First of all, I'd like to thank Dr. Lago for her interesting presentation. I personally agree that we should study the potential of undersea resources. However, I think it's much too early to consider making a large investment now. We need more information about where the mineral and energy resources are most easily obtained, especially in the waters near our coasts. We should spend at least five more years developing detailed maps of the sea floor. Only then should we start thinking about developing actual equipment for recovering those resources.

Chair: Thank you, Mr. Passy. Next, Representative Schoene.

Schoene: I would like to ask Dr. Lago a question. Who owns the rights to valuable resources found beneath international waters? Even if we were to develop the technology to collect those resources, would we have the right to keep them?

Lago: In 1994, the United Nations created an organization called the International Seabed Authority. That organization is now developing guidelines to regulate deep-sea mining in international waters.

Schoene: Has everyone accepted the jurisdiction of the organization? I mean, do all the nations in the UN recognize its authority?

Lago: Well, I mean, I don't have the latest numbers, but most countries do. Everyone in our region does. But yes, it's true that some countries still don't recognize it.

Schoene: Hmm. It seems to me that, without a strong agreement accepted by everyone, there's a danger of serious conflict. We could be asking for trouble.

Chair: Thank you, Mr. Schoene. Finally, Representative Acklyte.

Acklyte: It concerns me that not one speaker has mentioned the environmental impact of deep sea mining. Those hydrothermal vents produce rare and amazing biological systems. There are hundreds of species of bacteria and other living things that were completely unknown just a few years ago. If we dig up the floor around those vents, we'll destroy those systems before we have a chance to study them, before we even know what we're destroying. We have no idea what the impact might be. And those nodule fields, too--it took millions of years for them to form. Once they're cleared away, they'll be gone forever.

Lago: Mr. Chairperson, if I may.

Chair: Go ahead, Dr. Lago.

Lago: Representative Acklyte is correct that deep-sea mining will have some effect on the environment, but I'm confident that we can minimize that impact by using sound techniques and good technology. What's even more important, though, is what's happening right here on land. Our people need jobs, and they can have them if we really commit ourselves to developing these deep sea resources.

Chair: Thank you, Dr. Lago. I'm afraid we're now out of time. We'll continue our discussion at our next meeting in April.