Ann. Bull. RILP (1982) No. 16, 51-62

# AN EXPERIMENTAL PHONETIC OBSERVATION OF THE TAKAMATSU ACCENT

*Ray Fukui**

## 1. Introduction

The accentual system of the dialect spoken in Takamatsu, a city located on the northeastern coast of Shikoku, Kagawa Prefecture, has long been known for being difficult in terms of capturing its exact phonetic shape and in terms of establishing an appropriate phonological representation for it (cf. Wada (1958), Hattori (1973)).

This paper tries to elucidate the phonetic aspects of this accent by the experimental method. Since the entire study has not yet been completed, I will report here only the results for two-mora words produced by one informant.

## 2. The Accentual Patterns of Two-Mora Words

Generally speaking, this dialect tends to show less rise and fall in pitch than dialects such as Kōchi and Kyōto. And the distinction between one pattern of accent and another is sometimes very obscure, especially to non-native speakers' ears.

Two-mora words have reportedly four accentual patterns at surface level (see Fig. 1). The observations of Wada (1958) are basically the same as those of Kindaichi (1967), except that Kindaichi hears a rising pitch in the second mora of low atonic words. My observation, however, differs from Wada's and Kindaichi's in that I feel that the alleged oxytonic words are divided into two patterns (3a and 3b).

From a historical point of view, it can be easily shown that words having pattern 3b were originally prototonic and grouped with the words having pattern 4. Then, at a certain time, the 3b words parted from pattern 4 and, according to Wada and Kindaichi, completely merged with words having pattern 3.

In my opinion, the point is that the merger is not yet complete and, no matter how subtle it may be, there is a phonetic difference between 3a and 3b.

Hattori (1973) considers two possibilities about the merger: either (1) the 3b words have a pitch pattern like o o͡ ~ o̅ o͡ and phonologically should be grouped with the 4 words; or (2) a complete merger has taken place and there is no distinction between 3a and 3b.

My observation of course is in line with the former possibility.

* Department of Linguistics, Faculty of Letters, University of Tokyo

| | Wada (1958) | Kindaichi (1967) | | | Fukui |
|---|---|---|---|---|---|
| high atonic | o ō | o ō | 1 | 1 | ㅏoㄱo~ㄱo o |
| low atonic | o o | o ó | 2 | 2 | ㄴoㅏo~ㄴo o |
| oxytonic | o ò | o ò | 3 | 3a | ㄴoㄱo~ㅏoㄱo |
| | | | | 3b | ㅏoㄱo~ㄱoㄱo |
| prototonic | ō o | ō o | 4 | 4 | ㄱoㄴo |

Fig. 1 *Accentual patterns of two-mora words. Accordings to two previous investigators and the present author.*

Table 1 *Test words*

1 泡 /awa/"bubble" 犬 /inu/"dog" 梅 /ume/"Japanese apricot"
釜 /kama/"iron pot" 炭 /sumi/"charcoal" 庭 /niwa/"garden"

2 飴 /ame/"candy" 粟 /awa/"millet" 稲 /ine/"rice"
鎌 /kama/"sickle" 隅 /sumi/"corner" 鑿 /nomi/"chisel"

3a 雨 /ame/"rain" 鮎 /aju/ a kind of fish 海 /umi/"sea"
桶 /oke/"tub" 蔭 /kage/"shadow" 蜘蛛 /kumo/"spider"
鯉 /koi/"carp" 鶴 /curu/"crane" 露 /cuju/"dew"

3b 音 /oto/"sound" 川 /kawa/"river" 鞍 /kura/"saddle"
胸 /mune/"chest" 村 /mura/"village"

4 貝 /kai/"shellfish" 紙 /kami/"paper" 波 /nami/"wave"
昼 /hiru/"daytime" 冬 /huju/"winter"

## 3. Experimental Procedure

A recording of the test words was made on Oct. 9, 1981 during my field trip around Shikoku. Since the field trip was not primarily intended as an experimental study, conditions for the recording were not very good. However, fairly clear spectrograms were obtainable from the recorded material.

The informant, Mr. Masayoshi Uehara, was born in 1918.

Out of the recorded material containing some 500 words, 31 two-mora words were selected as the test words (see Table 1).

Each word was pronounced in three environmental conditions: (A) in isolation; (B) in the phrase /kono /("this "); and (C) in the sentence frame / ga aru./("There is ."). (These correspond to Graphs A, B and C, respectively, in Figs. 2~17.) Narrow and broad-band spectrograms were made for each word in each environment. In the following, my discussion will be based on the pitch-curves obtained from the narrow-band spectrograms.

## 4. Results and Discussion

Figs. 2~17 show the tracings of the fifth harmonic on the narrow-band spectrograms. In each figure, an approximate segmentation is also given.

I. Figs. 2~6 Examples of each of the five accentual patterns.

(1) Fig. 2 vs. Fig. 3 (high atonic vs. low atonic)

The pitch curves are seemingly alike, and yet upon careful examination, there are consistent differences. First, compare 2A with 3A. The curves in 3A are flatter and, on the average, 10–20 Hz lower than those in 2A. Comparing 2B with 3B, a lower pitch for 3B is apparent. In 3C, the highest pitch is observed on the particle /ga/, while in 2C the highest pitch is generally observed on the word in question.

(2) Fig. 4 vs. Fig. 5

Comparing 4A with 5A, or 4C with 5C, there seems to be no apparent difference. A comparison between 4B and 5B, however, reveals that, in the case of 4B, there is a pitch drop between /kono/ and the word in question.

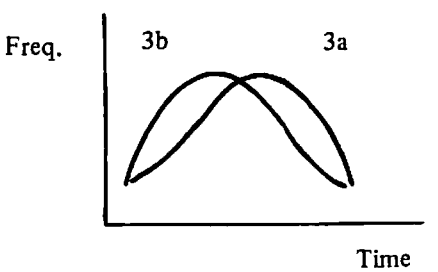
II. Figs. 7~17 Examples of minimal pairs and quasi-minimal pairs.

(1) Figs. 7~9

The distinction between the high atonic and low atonic pattern, as mentioned above, is present in all three of these cases.

(2) Figs. 10~12

Comparing 3a words such as /oke/, /kage/, /kumo/ with 3b words such as /oto/, /kawa/, /kura/, there seems to be a consistent difference in pitch curve, which I schematically represent below.



(3) Figs. 16 and 17

It is interesting to note that the two curves in each graph are very alike, in spite of the fact that one of them is classified as 3 (or 3b) and the other as 4. In these cases, the length of the segments in a word seems to affect the perception of the accent.

## 5. Conclusion

The pitch curves of 3a words and 3b words are phonetically different at least for the examples discussed above. But all the examples are only quasi-minimal pairs and therefore, it is necessary to verify this finding by using true minimal pairs.

Supposing that my observation is correct, however, it doesn't necessarily follow that previous observations were wrong, since it is possible that younger informations have a different accentual system from older ones.

## Acknowledgment

I would like to thank Mr. Masayoshi Uehara for his kind help as informant. I wish to thank also the staff of the Bunkashinkōka of Takamatsu city for providing me with the opportunity to make the recordings in a quiet room.

## References

Hattori, S. (1973); What Is the Prosodeme? i.e. "Word Accent", and What Are Its Distinctive Features? In Gengo no Kagaku 4.

Kindaichi, H. (1967); Nihongo On'in no Kenkyū.

Wada, M. (1958); Hukuzatsuna Akusento Taikei no Kaisyaku. In Kokugogaku 32.

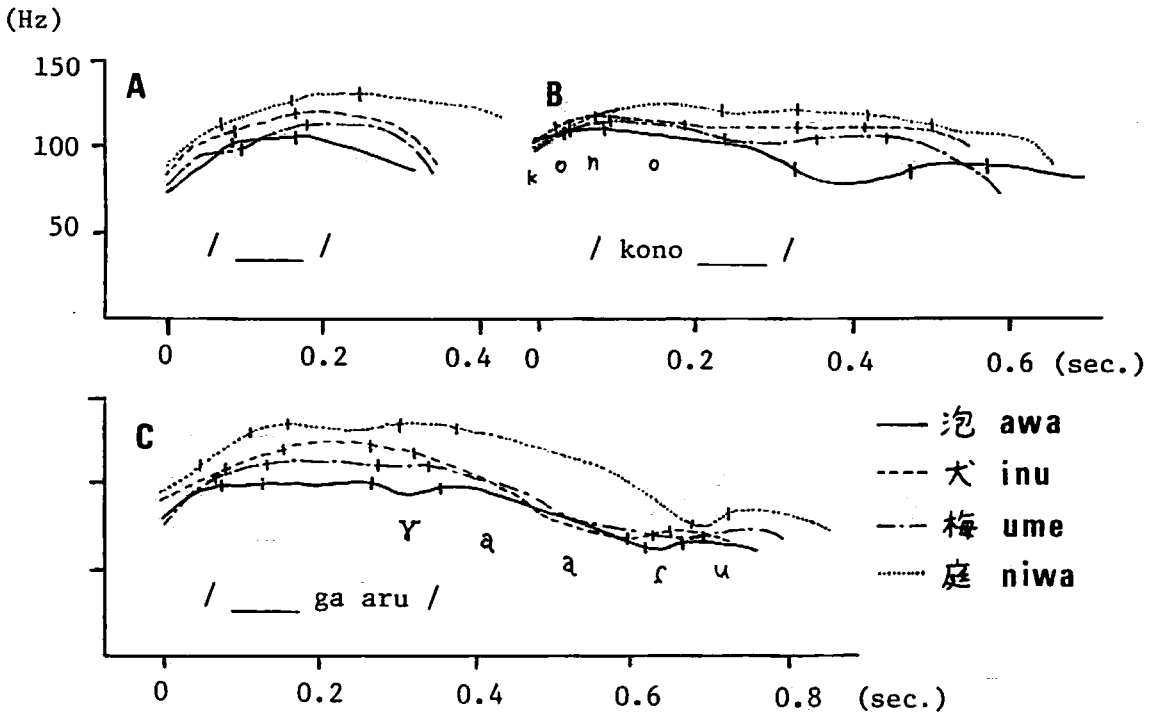



Fig. 2 *Words having a high atonic pattern.*

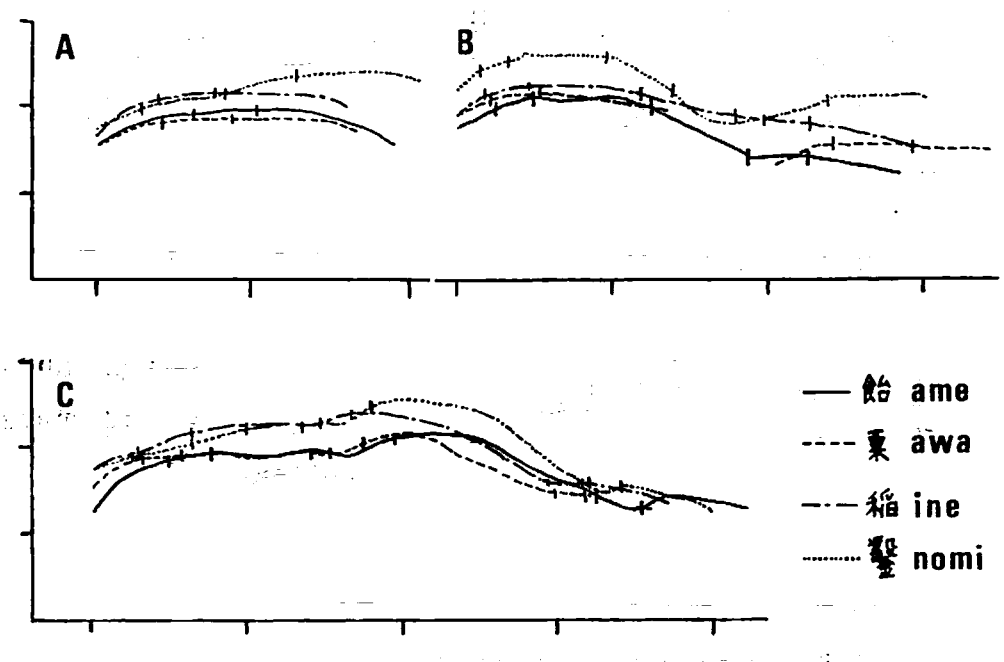



Fig. 3 *Words having a low atonic pattern.*

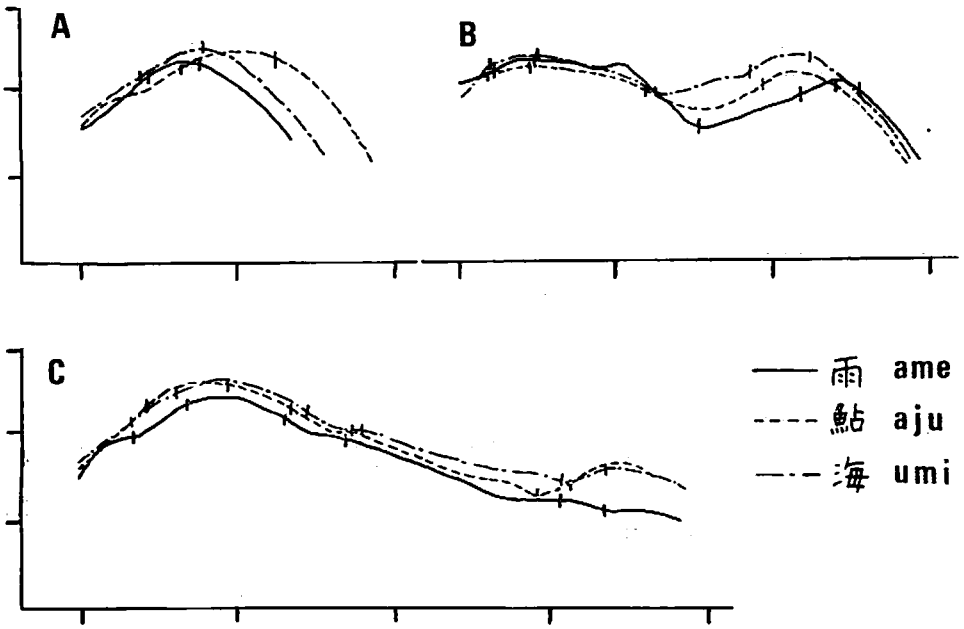



Fig. 4 *Words having an oxytonic pattern (3a).*

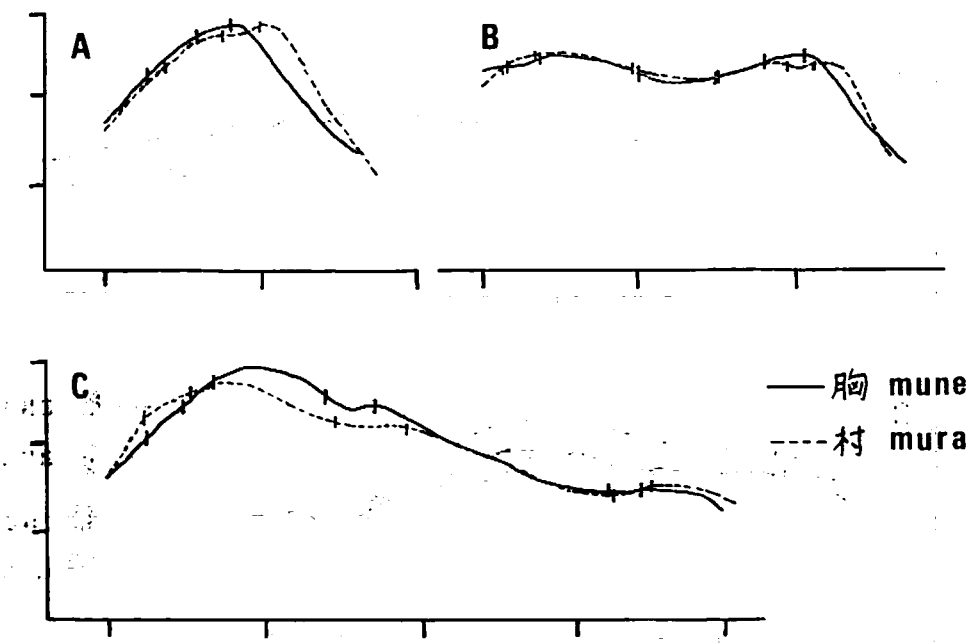



Fig. 5 *Words having an oxytonic pattern (3b).*

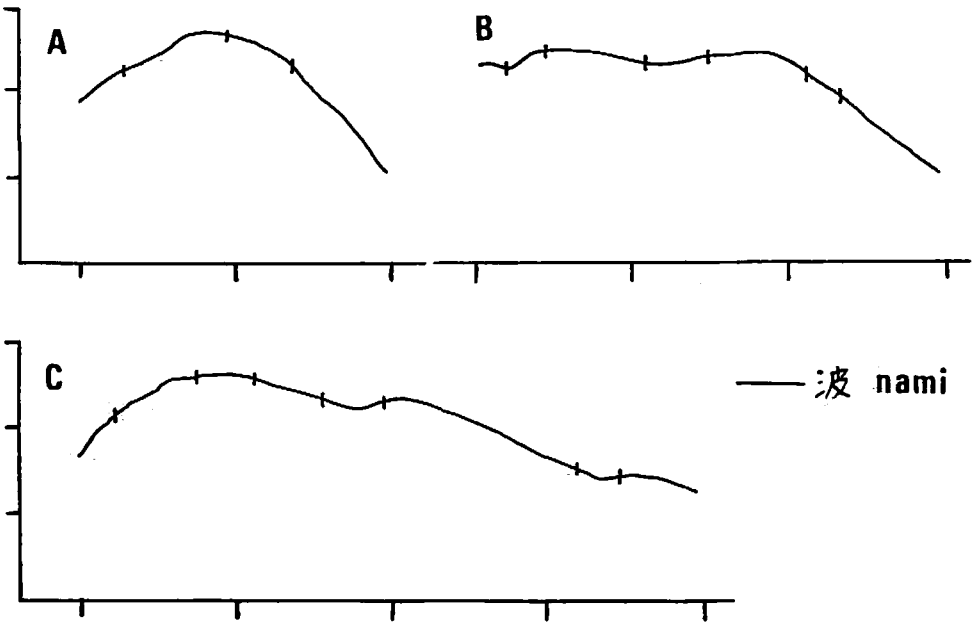



Fig. 6 *Words having a prototonic pattern.*

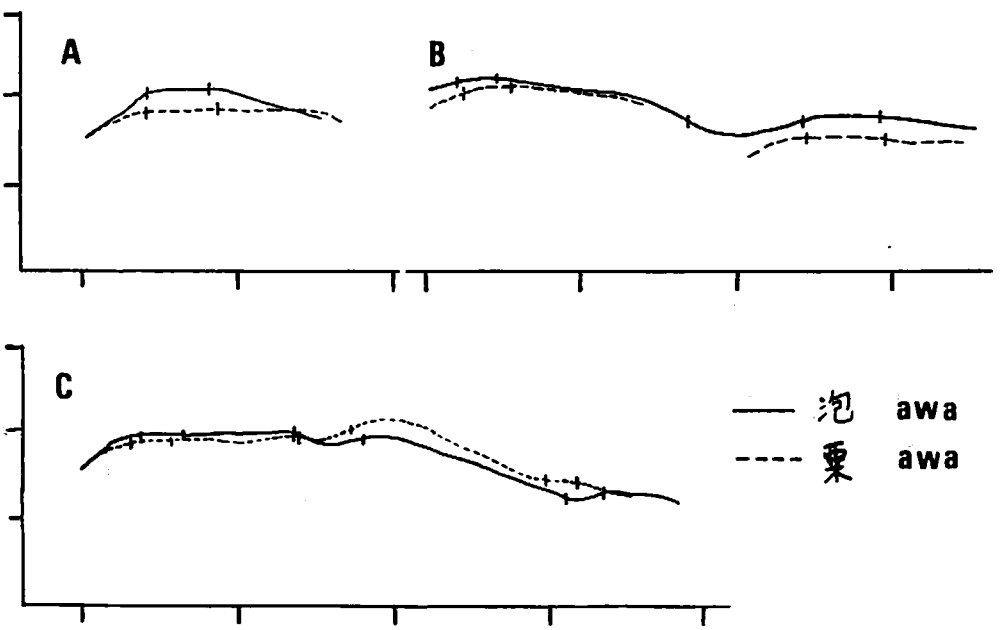



Fig. 7 *Comparison between high atonic and low atonic patterns.*

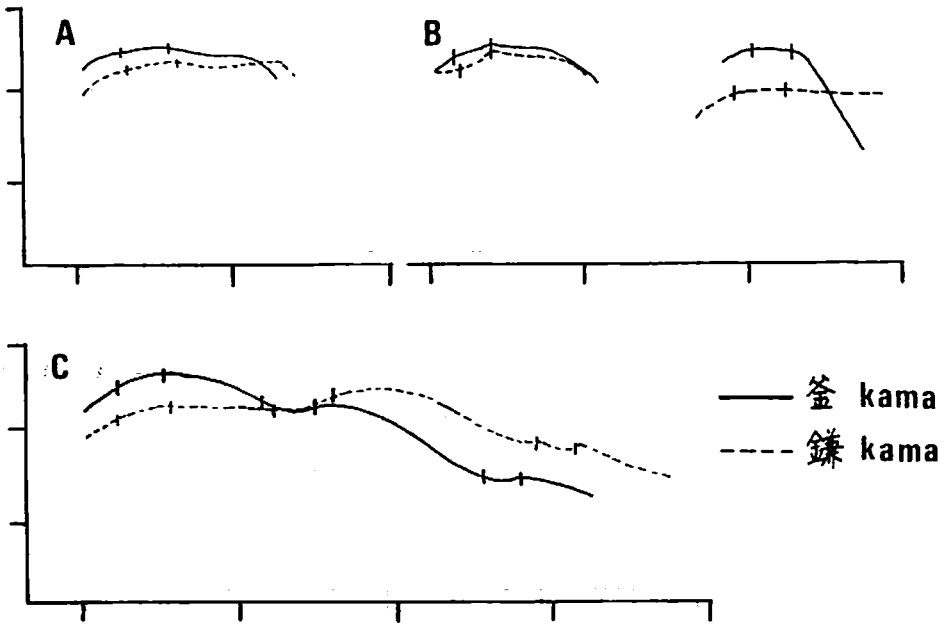



Fig. 8 *Comparison between high atonic and low atonic patterns.*

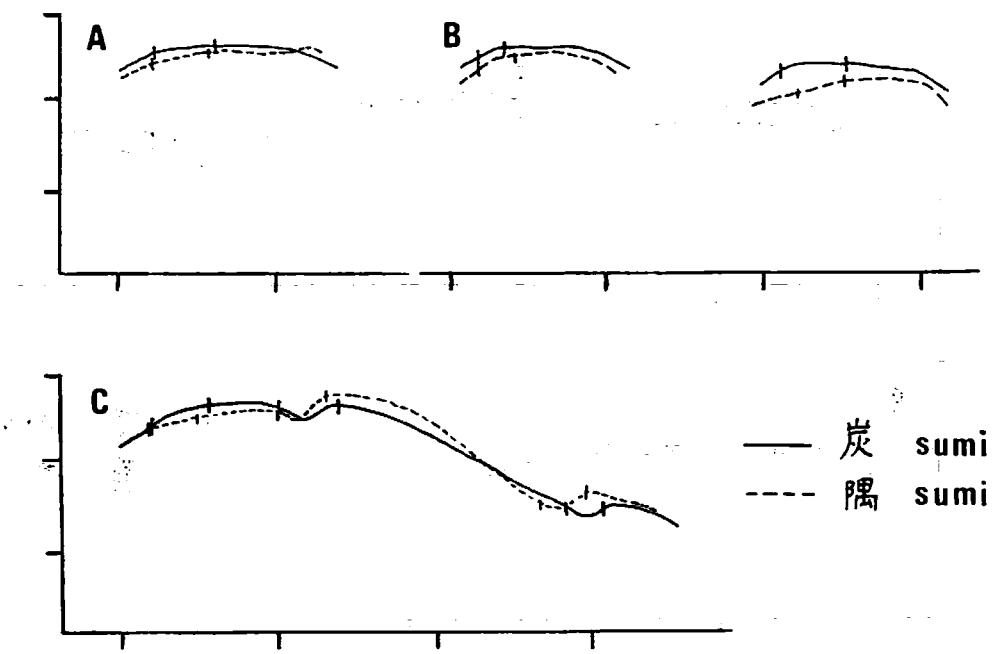



Fig. 9 *Comparison between high atonic and low atonic patterns.*

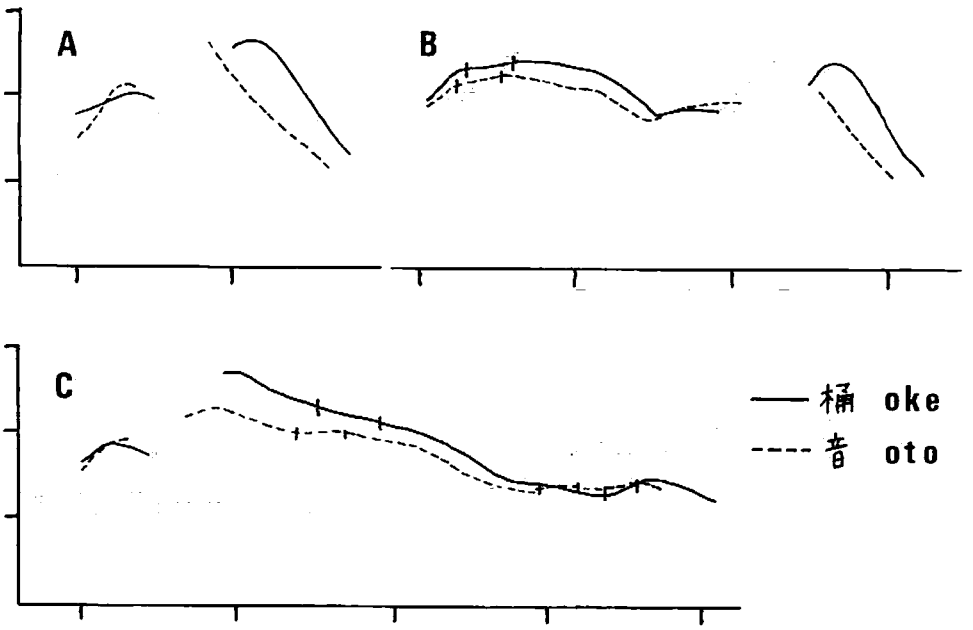



Fig. 10 *Comparison between 3a and 3b types of words.*

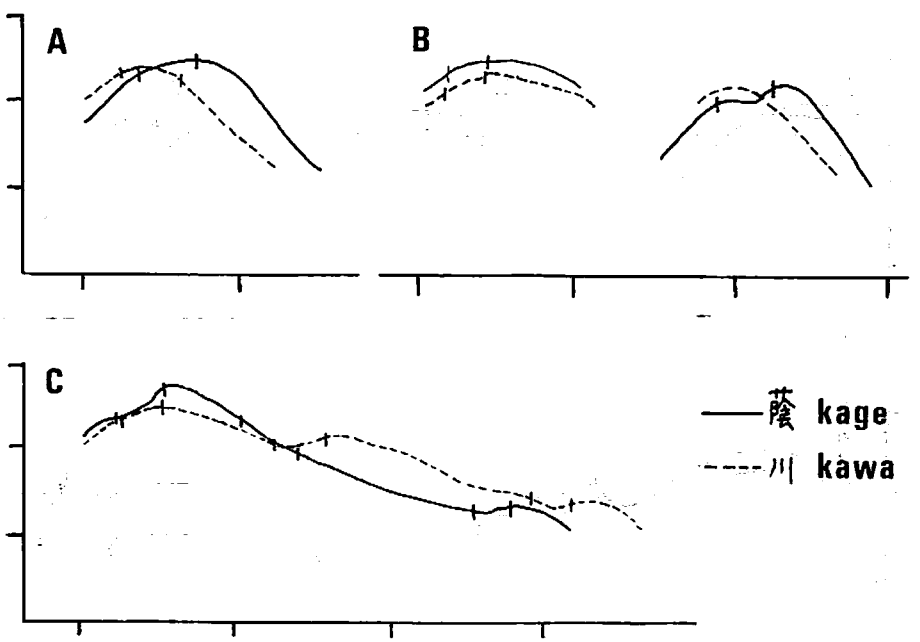



Fig. 11 *Comparison between 3a and 3b types of words.*

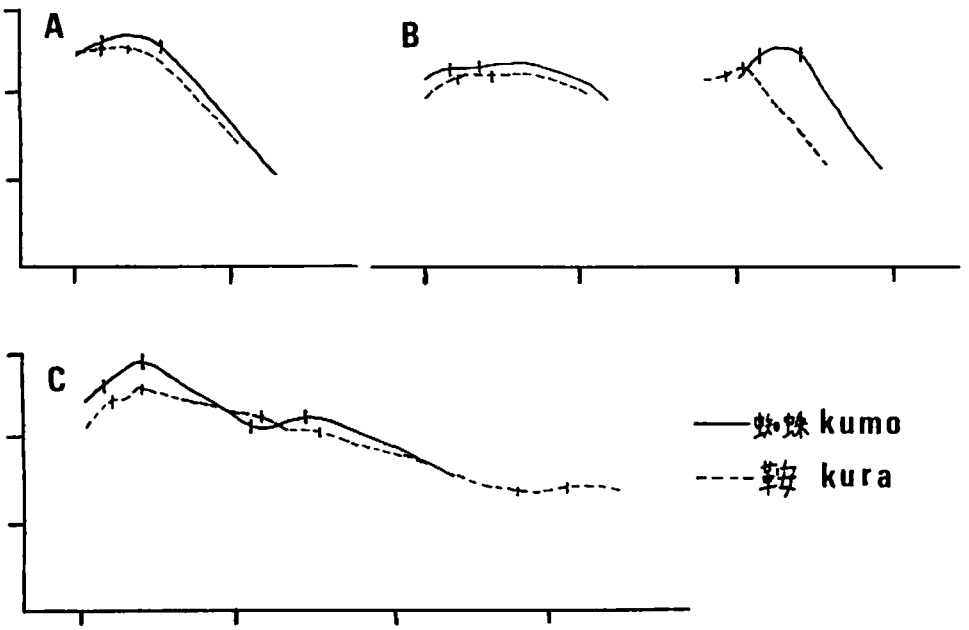



Fig. 12 *Comparison between 3a and 3b types of words.*

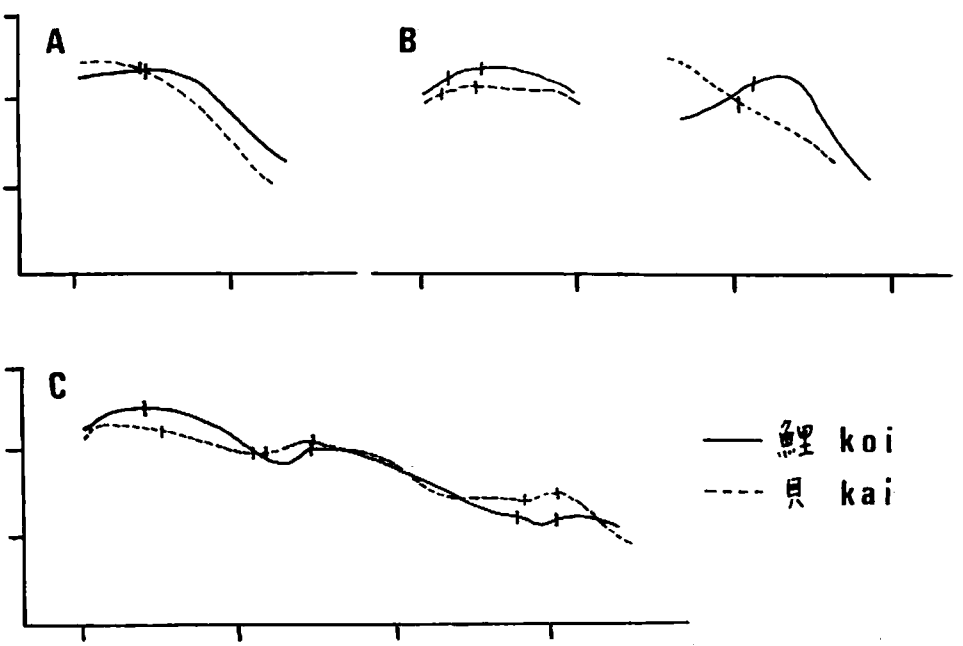



Fig. 13 *Comparison between 3a and 4 types of words.*

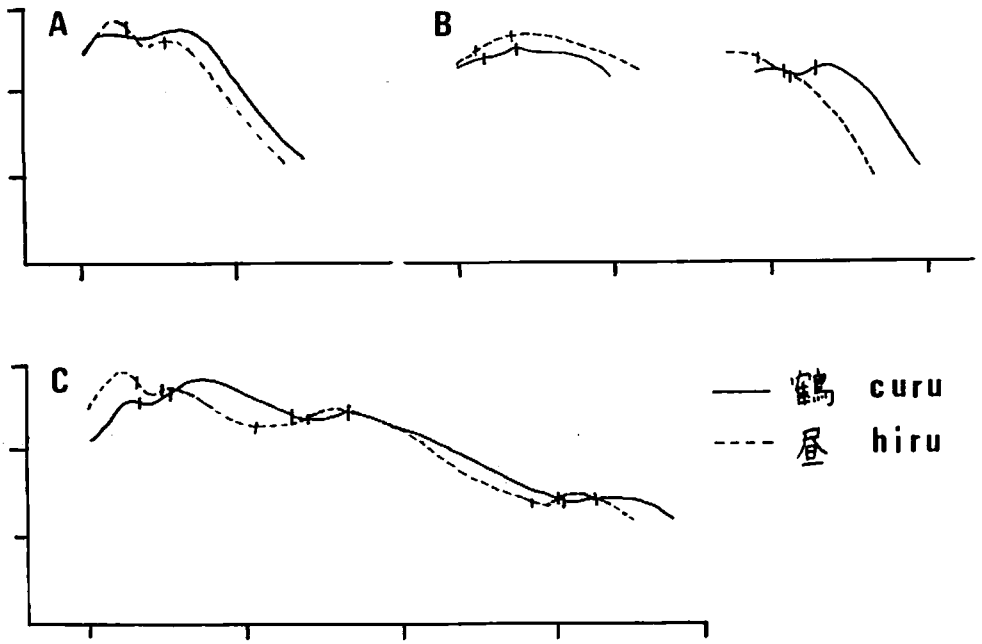



Fig. 14 *Comparison between 3a and 4 types of words.*

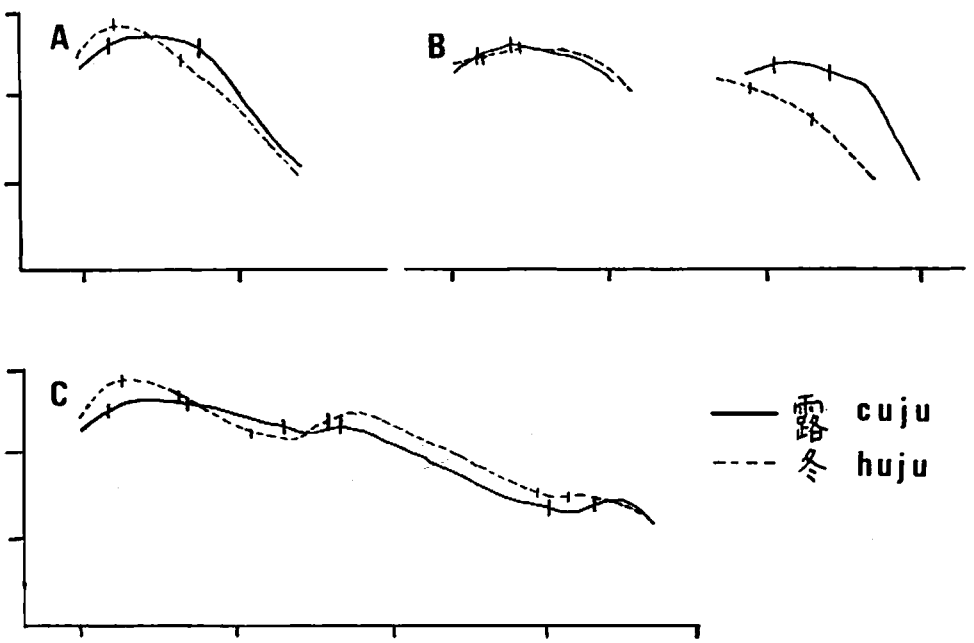



Fig. 15 *Comparison between 3a and 4 types of words.*

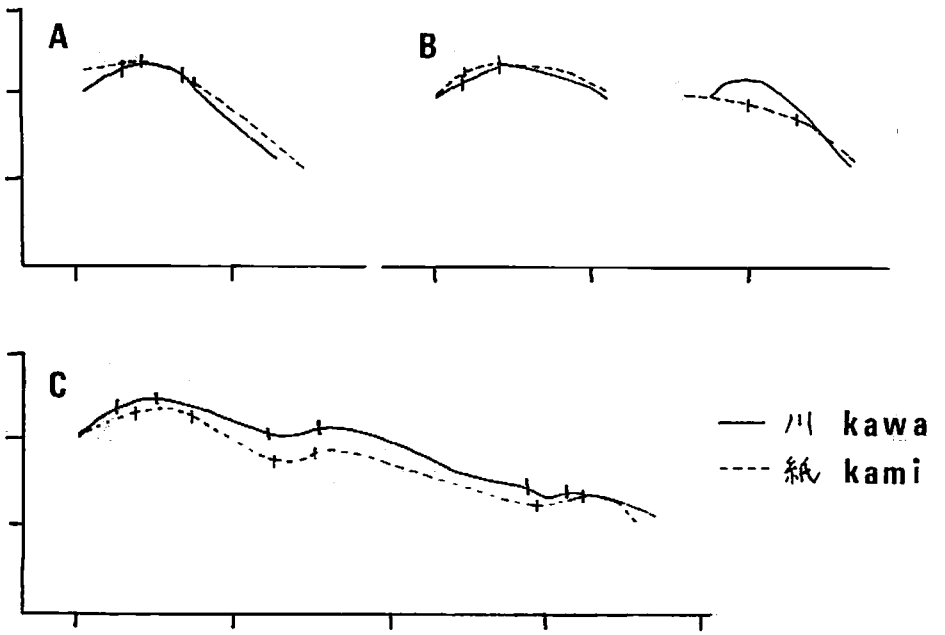



Fig. 16 *Comparison between 3b and 4 types of words.*

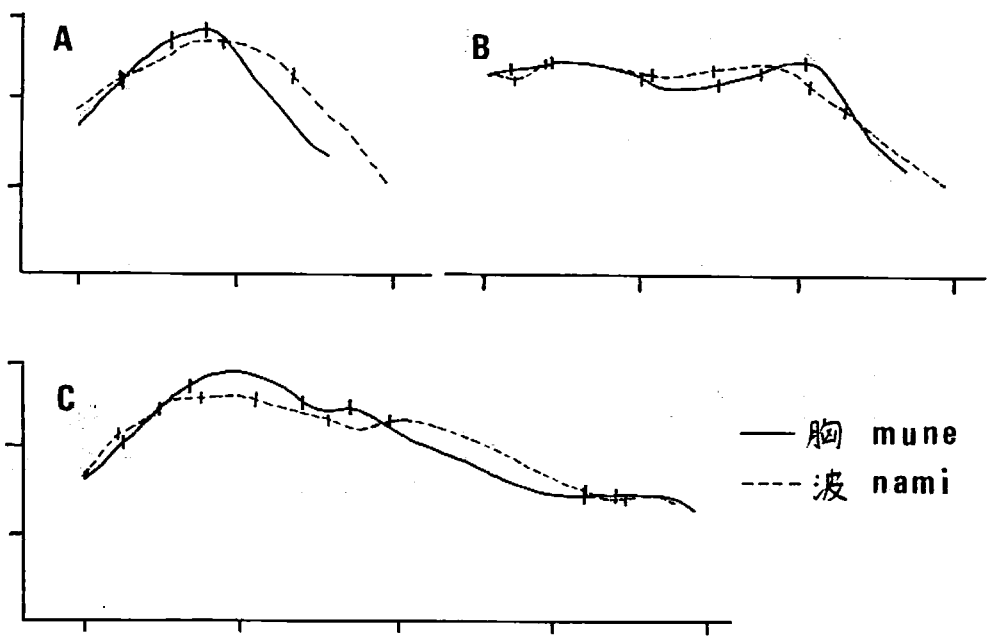



Fig. 17 *Comparison between 3b and 4 types of words.*