FLUTOPEDIA

The Flute and Flute Music of the North American Indians

by Judy Epstein Buss

Citation

[Buss 1977] Judy Epstein Buss. The Flute and Flute Music of the North American Indians, M.Mus. Thesis - University of Illinois at Urbana-Champaign, May 1977, vi + 134 pages.

Contributing source: University of Illinois Urbana-Champaign Library
Digitizing sponsor: Flutopedia.com
Digitized by: Clint Goss on October 5, 2014

THE FLUTE AND FLUTE MUSIC OF THE NORTH AMERICAN INDIANS

BY

JUDY EPSTEIN BUSS

B.A., University of California (Santa Barbara), 1972
M.Mus., Michigan State University, 1974

THESIS

Submitted in partial fulfillment of the requirements
for the degree of Master of Music
in the Graduate College of the
University of Illinois at Urbana-Champaign, 1977

Urbana, Illinois

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

THE GRADUATE COLLEGE

May, 1977

WE HEREBY RECOMMEND THAT THE THESIS BY

JUDY EPSTEIN BUSS

ENTITLED THE FLUTE AND FLUTE MUSIC OF

THE NORTH AMERICAN INDIANS

BE ACCEPTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR

THE DEGREE OF MASTER OF MUSIC

Bruno Nettl
Director of Thesis Research

Robert E Bays
Head of Department

Committee on Final Examination†

Chairman

† Required for doctor's degree but not for master's.

D517

UNIVERSITY OF ILLINOIS
Urbana-Champaign Campus
The Graduate College
330 Administration Building

FORMAT APPROVAL

To the Graduate College:

The format of the thesis submitted by JUDY EPSTEIN BUSS

for the degree of MASTER OF MUSIC is acceptable to the

department of MUSIC.

May 3, 1977
Date

(Signed) Paula M. Niebuck
Departmental Representative

ACKNOWLEDGMENTS

I am most thankful to Dr. Bruno Nettl for his advice and guidance throughout all stages of this thesis. My thanks to Dr. Demitri Shimkin for his help which greatly contributed to this study. I am most grateful to Dr. George Herzog for granting me the permission to use his valuable recordings, and to Dr. Frank Gillis and the entire staff of the Indiana University Archives of Traditional Music for their assistance during the first phase of my research. My appreciation to Dr. Edward Wapp for his interest and contribution.

My sincere gratitude is due to my husband Howard Buss, and my good friend Ted Solis for their moral support, their patience and help in proof reading the manuscript.

TABLE OF CONTENTS

LIST OF FIGURES AND TABLES

INTRODUCTION: PROBLEMS OF RESEARCH

The flute occupied an important and unique role in the culture of the North American Indians. Its use was confined to specific aspects and events of their cultures. With the drastic changes that Indian cultures underwent in the last forty years--frequent dislocation, diffusion and acculturation--many cultural traits completely or partially disappeared, among them Flute-Lore.[1] Consequently this study is almost entirely based upon material gathered before 1935.

At all times, flute making and playing was specialized and the privilege of a few, so that ethnographical information about the flute was not readily available. This problem does not exist concerning vocal songs or stories which are performed and shared by all. A second factor was responsible for the scarcity of research material about the flute: in many instances among the American Indians magical and supernatural power was attributed to the flute. Secrecy surrounded the making and use of the flute, a fact which often prevented access to knowledge or study of flute-lore by other tribesmen or outsiders. (A discussion of this aspect will be presented later in this chapter.) The existing ethnography about the flute presents further problems. First, interpretation of the material. Accounts and descriptions by natives of their own culture are variable as are the informants themselves. Even among members of one generation within one village or town one finds great variation. The attempt to bring

the diverse information into focus inevitably leads to some speculation and perhaps to occasional distortion. Secondly, the American Indian culture embodies a spectacular complexity of beliefs and mythology. In each tribe one finds a network of clans, fraternities and other societies each of which had a long tradition of customs, taboos, ceremonies, costumes and a rich and intricate mythology. It is the enormous complexity of beliefs and rituals on the one hand, and variation in rendition on the other, which create a true challenge for the researcher to acquire a full understanding of the place of the flute in American Indian culture.

In the course of my discussion I will provide examples demonstrating the role of the flute in certain tribes. The available material on the flute seems to have been gathered somewhat unevenly. For various reasons some tribes were more thoroughly investigated than others. For example, a large number of monumental studies have been published on the tribes of the Southwestern U.S., whereas in the Eastern and Southeastern regions much less research was done. This does not mean, of course, that other tribes did not share some of those beliefs or at least that they did not hold beliefs of the same order, which will be discussed here.

The term flute, flageolet, and whistle are often used quite loosely by folklorists, ethnographers and others, however admirable, who gathered material about American Indian culture. Not being musicians, they were not aware of the distinct differences in structure and manner of playing of all three

instruments. The flute (transverse flute) and the flageolet (a type of recorder) share similar meaning and use in American Indian culture. Therefore, for the purpose of this study, they are treated as one. The term flute will be used here to refer to the instrument in general, for it is seldom possible to determine from the sources whether a flute or flageolet is referred to. The role and connotation of the whistle, however, greatly differ from that of the flute and flageolet. Any material about the whistle and accounts of rituals involving whistles was not included in this study.

The following pages will sketch the main aspects of the meaning of the flute in the American Indian culture. Within the limited framework of this study one can only hint at the richness and complexity of flute-lore which existed in the past. Much more evidence is needed in order to conduct a large-scale research project of this fascinating aspect of American Indian culture.

THE ROLE AND MEANING OF THE FLUTE IN NORTH AMERICAN INDIAN CULTURE

Regardless of great variation among cultures, the flute seems to be almost universally viewed as a phallic symbol. Throughout the world, the flute is associated with fertility, birth, life, and death and is used in numerous rituals centering around these subjects.[2] Among the American Indians as well, the flute, as a phallic symbol, became "medicine." Magical power was attributed to it and it was believed to influence fertility and related concepts. American Indian culture produced a rich mythology concerning the origin of the flute and legends demonstrating its supernatural power. The boundaries between myth and real life became blurred; thus, in rituals connected with the flute one witnesses a curious synthesis of the two. Various connotations are associated with the flute, all of which are tightly linked with a central subject, namely Life. In the course of this chapter I will discuss its symbolism and involvement in rituals centering around human fertility, general fertility in Nature (warm weather, rain, good crops, etc.), and its connection also with war, life, and death.

Human Fertility

The flute seems to represent particularly male fertility in North American Indian culture. Due to the limited scope of this study, a discussion of the psychological reasons for this

fact will be omitted. Briefly, the shape of the flute and manner of performance are the major, though not the sole factor. As Curt Sachs stated "Primitive man cannot overlook the resemblance between a pierced straight instrument and the penis" (Sachs, 1940, p. 44). From the mythology, as well as ethnographies gathered throughout North America it becomes evident that flute playing was restricted to men only.[3] Even in the Corn Grinding Ceremony of the Pueblo Indians, a ritual performed only by women, accounts describe a man playing the flute to accompany the singing and dancing of the women.[4]

The making of flutes, however, in principle was not restricted to males. This stems from the fact that North American Indians attribute magical power to it. The mythology demonstrates how flutes were made by shamans and successful dreamers, men or women, who, according to belief, had direct contact with the supernatural and were able to attach magical power to the flute.[5] Numerous examples of women flute makers can be found in the mythology, however, there seems to be no evidence of women flute makers in reality. The following are some examples of legends involving female flute makers. These also illustrate the nature of magical power attached to the flute such as weather control, means of transportation, and luring women. In the story "The Origin of the Flageolet" told by Mandan and Hidatsa informants, "Granny" (a characteristic mythological "medicine" woman), made a flute for a motherless boy whom she found and adopted. She taught him how to play it. The story incidentally does not explicitly say that in order to teach she actually played it

herself. Granny told the boy to walk in four circles (viewed as a magic number), each smaller than the other. When the boy played the flute the snow began to fall (Densmore, 1923, p. 82). In another legend told by the Papago a mother made two flutes of cane for her two sons. The cane had supernatural power: when the boys tried to reach it in the lake in order to bring it home to their mother, it continued moving away from them until it had travelled to each of the four corners of the lake (note again the number four). Finally it moved to the center and forced one of the boys to swim to it encountering several adventures before he finally got hold of the cane (Densmore, 1929a, p. 54). In the examples of female flute makers given, as well as in other sources, the flute is always made for a male to use, a fact which seems consistant with the tradition of North American Indian culture.

An instance which especially brings to focus the magical power attributed to the flute is found in Apache myths and tales. The flute becomes a means of transportation, a fact which Goddard says "is one of the recognized methods of rapid transportation" (Goddard, 1919, pp. 20, 25, 114). In several versions of the story "The Creation Myth" a man who was looking for his missing wife used the flute to travel across the mountains: "He started away, travelling with a blue flute which had wings . . . he went entirely around the border of the world" (ibid., p. 114).

The most direct link between the flute and its magical power and symbolism as male fertility is its use by men in courting. In a story told by the Crow Indians, a young man was in love with

a woman, but she rejected him. He then secluded himself in order to seek a vision. A supernatural being appeared to him in a form of an Elk,[6] and "blew the flute causing all female animals to scamper toward him." The man then returned to the village, made a flute duplicating the one he saw in the vision and succeeded charming his beloved (Lowie, 1935, p. 52). Similarly, a young Cheyenne man who was in love would go to a medicine man and ask him to bring his magic power to bear on a flute so that the girl he wanted would yield to his love (Grinnell, 1923, p. 134). The Wind River Shoshone Indians tell: "Once a woman heard a fine flute player who was very ugly on account of a disfigured lip. She was charmed by his playing and joined him at the night without knowing who he was until she discovered his identity when she left him" (Lowie, 1924, p. 311). Among the Sioux Indians shamans were paid to prepare this love charmer. The courting flute of the Sioux is the "Big Twisted Flute" of cedar ornamented with the effigy of a horse (Hassrick, 1964, p. 116). The Sioux claimed that the flute was effective only when accompanied by the magical music of love. The music, so they say, was composed by the shaman "according to instructions received in a dream" (ibid.). The music was sold to the young man along with the magic flute and "if properly executed, the music was irresistable." According to informant Leader Charge "some flutes were so powerful, that a girl hearing the melody would become so nervous that she would leave her tipi and follow it" (ibid.). In some cases the young man would take his love to the shaman who made the flute. The shaman would blow the smoke

of herbs at her and give her medicine to revive her (ibid.).

So far the symbolism of the flute in connection with human fertility has been discussed. In the following pages the extention of this symbolism into the general fertility of nature will be shown.

General Fertility in Nature

In those areas where corn is raised, its symbolic role as a fetish of fertility and welfare is tied in many instances to the symbolism of the flute. Whereas the flute is, by and large, associated with male (not only human) fertility, corn is primarily linked with female fertility and harvest. As far back as 1541 Castaneda noted the use of flageolets in the Tewa Pueblos Corn Grinding Ceremony. In this ritual performed by women only the sound of grinding stones was accompanied by their dancing, singing and a flageolet played by a man sitting at the door (Hammond, 1940).

A further demonstration of the close relationship between the flute and corn at a much later date can be found in an account by A. M. Stephen, of an initiation into the Hopi Flute Society: "When a young person is brought to look on the flute altar for the first time--he gives a handful of prayer-meal to the man he has chosen for a 'father.' The 'father' casts the meal on the altar. . .On the fourth night of the ceremony the novice is admitted to the chambers and is given the ritual corn ear, his 'mother,' which he holds throughout the song. . .The corn ear he places in his mother's house. It insures good flesh

and bodily health, and this is why a symmetric ear is always chosen" (Stephen, 1936).

The Blue and Drab Societies, which are now extinct, played a most important role in Pueblo culture. The chief duties of these societies were praying for rain and fertility as well as warm weather and good crops. Since Pueblo Indians live primarily in a desert environment, the absence of rain was a threat to their physical existence. Thus, much of the rich ceremonialism of the Pueblos centered around this preoccupation. One of the most important events which used to take place in Pueblo culture was the Flute Ceremony, occurring in August. It was observed every other year, alternating with the Snake or Antelope Ceremony (Coolidge, 1929, pp. 124-5). Detailed descriptions of the elaborate rituals of the Flute Societies are given by several scholars, such as Hough, Stephen, Fewkes and Parsons (1) Hough as quoted by M. R. Coolidge 1929, pp. 140-42; 2) Stephen, as quoted by Parsons 1939, pp. 843-44; 3) Fewkes 1894, pp. 265-89; Fewkes 1896, pp. 241-55; 4) Parsons, 1925). The ceremony and mythology are intimately connected, and secret rites were held in the society's ancestral rooms rather than in the kivas where most other ceremonies were held (Morris, 1913). The precise details of the ritual were known only to priests who were the chief performers of the ceremony, and responsible for its transmission to succeeding generations of priests. The flute altar was a shrine covered with drawings and a large number of items, each symbolic of a certain aspect of the ritual (for a detailed description, illustration and discussion of the flute altar see

Fewkes 1895, 1896). On the flute altar tiles was depicted Locust, the humpbacked flute player known throughout the Southwest, and "medicine" of the Flute Society. This intriguing figure is linked with warm weather and fertility, but even more with bravery. In one of the "Emergence Myths" told by the Pueblo Indians of Oraibi, at the "beginning," people rejected Locust. They "ran arrows through him . . . and he died." Later "he came to life again and ran about looking as he did before . . ." After that people changed their view concerning Locust and announced him "medicine," the guardian of wounded in war, for "he possesses wonderful powers of renewing his life" (Cushing, 1923, p. 167-8). The Hopi tell about brave Locust. He walked playing the flute when clouds from all directions shot lightning at him, but as he is said never to wink his eyes he was able to withstand the vicious attack and continue to play the flute. Afterwards the "Chief of Directions" concluded: "For sure he is brave, for sure he is a man." They then announced him "brave and deathless" (Stephen, 1929, pp. 5-6). The Navaho also tell of Locust's bravery: "The clouds shot their bolts through him, and he merely continued to play on his flute" (Stephen,1930, pp. 88-104). Locust is also a patron of societies established to cure lightning shock, and arrow or gun shot wounds. He can foresee, in dreams such events as war. In Hopi tales, Locust also plays to melt snow if so requested by the snake (Parsons, 1938, pp. 337-8). The various roles given to this character, then, embrace many aspects of life: Fertility, life, weather control for warmth and good crops, and war (throughout the Southwest, war societies are

associated with fertility rites and the convocation of rain[7]).

Through Locust and other personalities and objects discussed above the flute is associated, then, with warm weather and good crops on the one hand, and survival and bravery in war on the other. Thus in a rather intricate way even the dead are associated with life, rebirth and fertility: the dead are viewed as clouds ("cloud beings") which are in turn tied to rain and crops (clouds symbolize rain in the Southwestern region[8]).

The association of flute with war, life, and death is not unique to the Pueblo and Navaho. It is a widespread phenomenon in American Indian cultures. Among the Fox Indians the flute was one component of the medicine bundle in the White Buffalo Dance. In this ceremony, too, one finds themes of curing, rebirth, and victory over an enemy (Kidder, 1919, p. 37-8). A principal ceremony of the Winnebago Indians is the Wagigo, the "Winter Feast" or "War Bundle." The ritual focuses on success in war, although it later developed into a general celebration of thanksgiving. In the rituals the warriors are given the choice of the best meat. The host himself does not eat but instead plays the flute (Radin 1915-16, p. 430). Chippewa warriors used to go through the village playing the flute to signal an enemy's approach (Densmore, 1929b, p. 166-8). Because of insufficient evidence it is not clear, in this case, whether playing the flute by a warrior was an explicit signal of a coming war, or a "camouflaged" war signal in the guise of a lover's song. It is not known what difference if any, there was in musical style between a love song and a war signal.

Among the Wind River Shoshone a unique warrior society existed--the Wiyagait ("does-not-know-anything") also known as the "Crazy Dog Society." They went to the battle field armed only with flutes. A warrior tried to hit an enemy on the head with his flute. If he killed an enemy, he became a war chief and threw the flute away (Lowie, as cited by Parsons 1939, p. 307). In another example of a Shoshone tale, a dispairing lover, deciding that life was no longer worth living became a Wiyagait. Armed only with a flute he attacked the enemy and got killed (Shimkin, 1947, p. 307).

Weather Control

From legends and accounts of rituals and ceremonies a recurring theme emerges and illustrates one of the cardinal roles attributed to the flute, namely, its ability to control weather. The magical power of the flute was often applied to influence weather. In a Mandan and Hidatsa myth "The Origin of the Flageolet," Granny, who had made a flute for a boy, instructed him: "play a tune on the flute then lift upwards and revolve your body while circling the mountain each time lower." The boy circled the mountain four times, following Granny's instructions, and "there was a big blizzard." The bad weather was brought about in order to punish two hunters. Because of the blizzard they could not see, and were shivering from the cold. Since the weather prevented them from hunting they had not had food for several days and became very weak. They called the boy and begged: "We are in misery and want. Come down and save us."

The boy came down and "rubbing his flute, as if to clean it, made a circle with his arm to the sky. The clouds began to part and the sun shone bright and the snow melted" (Beckwith, 1938, p. 129). In the White Buffalo ceremony of the Fox Indians mentioned before, the flute is part of a medicine bundle. Dispelling storms is included among various duties of the bundle owner (Kidder, 1919, p. 37-8).

Locust the humpbacked flute player of the Southwest is believed to have special powers to control weather. As mentioned earlier he is the patron of the Pueblo Blue and Drab societies, which are in charge of performing rituals and ceremonies for the invocation of rain. In the elaborate ritual of the flute ceremony performed by these societies, a complex of symbolic objects and activities take part in the effort to bring rain for good crops. A certain stage of the ritual takes place by the water: "At the spring they sit on the north side of the pool, and as one of the priests plays the flute, the others sing, while one of their members wades into the spring, dives under the water and plants a prayer stick in the muddy bottom. Then taking a flute wades into the spring and sounds it in the water to the four cardinal points . . ." (Coolidge, 1927, pp. 140-42).

It is significant to note that the number four, which has a magical connotation in many Indian cultures, is always connected to the flute in rituals and myths as reinforcement of its supernatural meaning. Its involvement is expressed in a variety of ways, such as in ceremonies where the participants circle a place or an object four times, a certain action is carried out by four

people at different points in a ritual, or some aspect or procedure lasting four days. Detailed descriptions of the rituals can be found in the sources cited on p. 9 of this thesis. Also in myths, many examples in which number four is involved have been given in the course of this chapter. For example in the Papago legend "Story of the Origin of the Flute" (Densmore, 1929a, p. 54), in the Mandan and Hidatsa story "Origin of the Flageolet" (Beckwith, 1938, p. 129). Another example can be found in the legend "The Origin of the Courting Flute" told by members of the Dakota tribe (Deloria, 1961, p. 5-7).

The Visual Appearance and Structure of the Flute

The visual appearance of the flute is part and parcel of its symbolic role. However, because of the scarcity of material concerning this aspect, it is difficult to gain sufficient understanding of the variety of design and color of flutes in North American Indian cultures. Only occasional comments beyond superficial physical description are scattered throughout existing ethnographies. The following are some general comments; however, much more evidence is necessary before a substantial and conclusive study can be made.

One of the first questions which comes to mind is whether guidelines governing flute-making among the Indians have musical or extra musical bases. Testimony of various informants leads to the conclusion that extra musical reasoning is primarily responsible for its construction.

Three factors are the main determinants of pitch and scale 1) Flute length; 2) Number of finger holes and 3) Distance between holes. The most common number of holes found in North American Indian flutes is four to six.[9] Flutes of three and seven fingerholes also exist, as well as some with extra holes in the bottom of the tube. Evidence as to the reason for a certain number of holes is very sketchy; however, it may be speculated that the number of holes in some flutes is determined by symbolic rather than musical reasons. Since four fingerholes are most common it is likely that the number four, again, plays a symbolic role. In the myth "The Origin of the Flageolet" from the Mandan and Hidatsa tribes, Granny, who made a flute from a sunflower stalk, explains that "the seven finger holes represent the seven months of winter" (Densmore, 1923, p. 80-84).

As mentioned earlier some flutes had holes added at the lower end of the tube. As with some Chinese flutes, these holes were not used for playing. It is not clear whether those extra holes were bored for mere decoration or had some other function. It is not unlikely, however, that some Indian tribes were influenced by the Chinese. Merriam mentions the presence of Chinese influence in the latter part of the nineteenth century, when many Chinese came to Western Montana (Merriam, 1951, p. 368-75). Flutes with such added holes can be found in several tribes. Densmore describes a Chippewa flute with fix finger holes and five holes in a line around the end (Densmore, 1929b).

The distance between holes seems to approximate the size of the maker's hand and fingers or those for whom a particular

flute might be made. Merriam describes how a Flathead flute maker bores holes in a flute: ". . . the craftsman places his fingers on the hollow tube in what seems to be the appropriate position and burns the holes in the wood . . ." (Merriam 1951, pp. 367-75). The question of the distance between finger holes needs further study. The holes in many flutes, especially those of three or four, are equidistant. In a six-hole flute there often are two groups each comprised of equidistant holes. In another example Densmore tells about a Yuman flute maker, Captain George: "he marked places for three finger holes where his finger rested most conveniently" (Densmore, 1932, p. 26). In her book The American Indians and Their Music, she briefly discusses the question of finger hole position: "Indians in all tribes questioned by the writer say that the finger holes in the flute are spaced in a manner convenient to the player's hand." Sizes of flutes and material of construction may greatly vary within one tribe.[10] Many different kinds of wood are used, including cedar, juniper, box-elder, reed and so on. Some less common woods used are sunflower stalk (Densmore, 1923, pp. 80-84), dry reed of wild parsnip (Morris, 1913--flute of Takelmer tribe described). Other materials used: pottery (Pueblo) gun barrel (Apache) red pipestone (Siouan) (all the above described in Morris, 1913).

Color and design are among the visual aspects most revealing as to the connection between the flute and its symbolic role. A large number of flutes described or collected by ethnographers and ethnomusicologists were painted in a variety of colors. Some

colors such as red, pink, black, yellow, and green are particularly widespread. Colors are applied to the flutes either by staining, or drawing specifically symbolic figurations such as arrowheads, zigzags (depicting lightning), the horned water serpent, and stars. Colors bear a wide and intricate variety of connotations. Each color may be linked with certain aspects of life and the universe. Every direction of the world, for example is depicted by colors.

Some of the geometrical designs mentioned above are burnt into the wood so that the black designs stand out on the lighter color of the wood. Another widespread tradition is the ornamentation of flutes with animal effigies. A Papago flute in the New York Metropolitan Museum of Art collection, terminates with a bird's beak. The courting flute of the Sioux bears a bird's head. The Big Twisted Flute of the Sioux is ornamented with the effigy of a horse and painted red at the interior of each orfice. An Oglala flute on display in the New York Metropolitan of Art is decorated with a carved rabbit. In the Heye Foundation's Museum of the American Indian in New York, Cheyenne and Winnebago flutes on display end in bird's heads.

In the intricate American Indian culture animals symbolize certain aspects of life or attributes such as bravery, successful hunting, and wealth. It is therefore not surprising to find animal effigies carved or mounted on flutes. Other ornamental and ceremonial devices often used include beads, shells, feathers, glass, chips of metals or even the attachment of small medicine bundles.

The foregoing discussion of the different elements which effect the construction and appearance of the flute supports the assumption that non-musical concepts greatly influence flute making. However, there is clear evidence that musical criteria also play an important role: 1) the analysis of flute songs which follows this chapter demonstrates that there is, generally speaking, a uniform system in the musical style including scales. This would probably not have existed had their construction been entirely based on non-musical considerations, 2) the stongest evidence proving that flute makers were concerned with the pitches produced by their instruments is the fact that on many flutes a tuning block was mounted to control intonation. Examples of such flutes are described (including photographs) in a catalogue by F. Morris listing the musical instruments housed in the New York Metropolitan Museum of Art. On p. 124-5, #579 is a Chippewa flute with a tuning block, #1976 is one of the Apache, and #3541 a Seneca flute. A number of flutes to which a tuning block is attached are on display in the Museum of the American Indian in New York. Flutes in that collection which have tuning blocks include those of the Blackfoot, Semiole and Winnebago.

Notes

1. Flute-Lore: the traditional beliefs, legends, customs, ceremonies and music centered around the flute.

2. See, for example, Anthropological Papers of the American Museum of Natural History vol. 36, 37; C. Sachs 1940, many examples cited on pp. 44-45.

3. Throughout the examined material only one example was of a woman playing the flute and that only for the purpose of teaching a boy how to play it. This example is "The Story of the Origin of the Flute." Densmore, 1929a, p. 62.

4. Hammond, 1940; Parsons, 1939, p. 380.

5. Grinnell, 1923, p. 9 (in notes); Hassrick, 1964, pp. 116, 146-7.

6. Among several tribes the elk symbolizes masculinity, beauty, virility, virtue and charm. See for example Deloria, 1961, p. 6.

7. Parsons, 1939, pp. 115, 880; Parsons, 1929, p. 652.

8. Parsons, 1939, p. x.

9. Morris, 1913; many of the sources in the bibliography include descriptions of flutes.

10. Ibid.; also in many of the sources listed in bibliography.

THE FLUTE SONGS OF THE AMERICAN INDIANS

Introduction

Objectives

American Indian musical style has been, for a relatively long time, subject to continuous study. Although the music of a number of tribes has not yet been investigated, and that of others still needs to be approached in greater depth, studies by a large number of scholars have aided in clarifying characteristics of regional styles and of other classes of music as well such as Peyote songs, gambling songs etc. After a thorough review of existing research materials it became clear that flute-lore and musical style, despite their uniqueness and significance in North American Indian culture, have, so far, been overlooked or ignored. Some scattered data or individual trascriptions of flute songs can be found occasionally in analyses and articles dealing with other subjects. However no study to speak of centers around flute music per se. It is thus the aim of this chapter to explore this important subject in order to extend knowledge of the American Indian culture.

Limitations

One of the greatest limitations posed on this study is the fact that flute-lore is almost totally extinct among North American Indians. Most of the ceremonies and rituals in which flute was used (both musically and symbolically), are not

practiced today any more. Courting, for example, is done in more modern ways, and does not involve serenading on the flute as in the past. A number of young American Indians today, who are aware of the painful impovrishment and decline of North American Indian traditions and culture are making efforts to revive what can be salvaged from a rich cultural past. Among them are also American Indian flute players who compose flute songs according to what they consider to be the traditional style, or rescue melodies from "old-timers" who may still remember some songs.

This study is based entirely on material gathered early in the 20th century, when flute-lore was still an integral part of a living culture. Even though this fact presents many advantages, it also creates some serious limitations. Very little is known about the circumstances in which the material was elicited, about methods of collecting and about the informants and songs, as most of the informants and/or researchers are now deceased. The available recordings of past fieldwork are accompanied by rather sketchy notes about the items above. It is also difficult to determine to what extent these songs are representative of the flute musical style of their tribes since only one flute player was normally recorded from each tribe. This further complicates the issue of scales and tuning since only one flute was used to represent each tribe, and there is possibility of intra-tribal variety.

In conclusion, despite the limited scope of this study (ca. fifty songs) and the problems described above, this thesis can

provide a basis for more extensive future study of North American Indian flute music. The songs analysed here, recorded in ten different tribes at different times, can presumably be considered as an adequate sampling of flute musical style.

This collection consists of recordings done by various ethnomusicologists between the years 1905-1952 (a list of recording dates, collectors' and performers' names is given below). In the recordings a number of flute melodies were each preceded or followed by a vocal version of the same song, done by the same performer. In the analysis differences and similarities between the two forms of performance are illustrated.

Song No.	Tribe	Collector	Performer	Year recorded
1-14	Winnebago	Herzog/Schultz	Sam Blowsnake	1939
15-17	Winnebago	C. Hoffman	Sam Blowsnake	?
18	Mesquaki	Kurath	Wilson Roberts	1952
19-28	Fox	Hout/Randle	Jim Powershick	1928
29-30	Chippewa	C. Hoffman	Roi Clearwater	?
31	Yuchi	Speck	Jim Tiger	1905(cylinder)
32	Apache	Goddard	Crook Neck	1909(cylinder)
33-44	Pima	McCullough	Joseph Moffat	1930
45-47	Kiowa	Rhodes	Belo Cozad	?
48	Sioux	Rhodes	?	?
49	Flathead	Merriam	Jerome Vander-burg	1950

Methods

Transcriptions. An effort was made to transcribe each song in a manner closest to its actual sound. Barlines were not used,

since the songs clearly exhibit the absence of regularly recurring accents. Time values represent as closely as possible the true length of each note, and were not modified to create a "normalized" transcription. Since all songs were characterized by a roughly regular pulse, tempo was determined by metronome marking. Tempo evaluation here does not attempt to explain or coincide with American Indian concepts of tempo, but was made for the purpose of comparison and analysis. For various technical reasons it was not possible to transcribe all songs beginning on a common tone. However a table of scales all transposed on C is provided in the back to facilitate comparison (see pp. 98-100). In this table, C is not to be understood as tonic but merely as the lowest tone of each scale (song), for not in all songs is the tonic identical with the lowest tone.

Pitch Material. From each song all pitches were extracted and arranged in a row. A mode was determined through hierarchy of pitches (such a hierarchy was not assumed, but was actually found in all songs). The term, "scale," is used here in its general meaning, namely, a group of tones arranged in order of pitch to a system of intervals. In each scale two or three "pillar tones" were identified according to role, frequency duration and place in the song. The tonic is defined as the chief gravitational point in the hierarchy. Other tones in the songs tend to flow and lead to repose at the tonic. The tonic often starts a song or phrases, it frequently ends phrases but always ends the song. At the end of phrases and of songs in particular, the tonic is generally repeated three to four times

or appears in long time values. Besides the tonic, two other pillar tones usually exist in each song. They are here called the second and third pillar tone (the terms dominant and subdominant were purposely avoided because of their specialized implications). As in the case of the tonic, the second and third pillar tones as well were determined by role frequency duration and place. In the process of scale analysis no evidence was found that octave duplications are disregarded by the American Indian composers, so that in counting the number of tones comprising a scale these were not considered by the writer as one and the same. In North American Indian musical style one is obviously not dealing with music based on a theory of scales and intervals such as that of Western music. Each tone should therefore be regarded as part of the pitch material comprising the music.

Furthermore, even in dealing with Western scales, octave duplication is never disregarded: analysis also reveals that tones an octave appart are not treated alike and there seem to be definite rules as to approaching each one and as to hierarcy among notes in a song.

Phrases. In most songs, certain easily recognizable units were labeled as phrases. They were determined according to cadential patterns, phrase repetitions and general organization within each song. Phrases were marked alphabetically according to the following guidelines:

1. Intoning phrase (usually shorter than other phrases) three or more repetitions of the tonic, or three or more

repetitions of tonic-octave-tonic. Such a phrase is marked "a."

2. A phrase receives the same letter as another (e.g. a, a) if it is identical or exhibits only minor differences (no change in structural tones).

3. A phrase is labeled a' if the general skeleton (including structural tones) is the same as the phrase labeled "a."

4. A phrase is labeled b^a if it is different from the previous phrase, "a," in structural tones, rhythm and final cadential pattern but contains a fragment clearly taken from phrases "a."

5. Similarly to the above case, the phrase is marked $b^{a\,8}$ if the fragment taken from a is a transposition from its original appearance an octave higher ($b^{a}{}_{8}$ same as before however fragment transposed an octave lower).

6. A phrase is marked b^8 if it is identical with phrase, "b," but transposed an octave higher (b_8--same as above but transposed an octave lower).

7. A phrase is marked $b'^{(+)}$ when it is similar to a previous phrase, "b," but is longer ($b'^{(-)}$ indicated shortening).

The analysis and discussion in this thesis are based on detailed analysis resulting in statistical tables, which are presented on pages 91-129 in support of the discussion.

Analysis

Pitch Material

Number of tones in the scale (Fig. 1, tables 1, 1a). The American Indians do not usually verbalize about their music to

the point of creating an explicit theory. However, the aesthetic bounderies which they had come to recognize and accept reflect an existing system. In an attempt to analyze that system, care was taken to use those methods which were to lead to revelation of the principles behind that style. American Indian music was not conceived by its composers as based on scales. It seems to be founded on an entirely different set of principles, which will be clarified in the course of the analysis. Whereas extraction of pitches, and their arrangement into scales, enables the ethnomusicologist to unveil certain principles, at the same time such a method can also obscure and distort the analysis and result in false conclusions. In the following discussion dealing with the number of pitches used in the music, certain weakness and limitations of scale analysis will be taken in consideration and pointed out. When attempting to discover the "scale" of a given repertoire or song, one must differentiate between the collection of all pitches used and the core or "basic scale." The difference in number of pitches between the two categories stems from the following: 1) Scalar Chromaticism resulting from changes in intonation in both flute and vocal melodies; 2) mistake and/or occasional deviation from the norm. Determination of the core of a scale poses a further problem, for it is often difficult to judge whether a tone is a deviation from the basic scale or one which is part and parcel of it even though it is used only once.[1] The need of making such judgments inevitably leads to some imperfection.

Most of the songs in this collection are based on a fairly

limited variety of pitches. All except nine songs use seven pitches or less (see tables 1, 1a). Many songs use as few as four to five tones. Two songs are based on an exceptionally large variety of pitches: Winnebago #1--utilizes nine different pitches, and Fox #20 has ten (both songs are vocal).

The vocal songs in this study, all of which follow or precede flute renditions of the same song, tend to use a larger number of pitches than the same instrumental melodies,(e.g. #6-7; 12-13; 33-34; 35-36; 37-38). The reason lies in the fact that flute pitches are fixed by the physical structure of the instrument. Pitch flexibility is possible, to some extent, through varying the intensity of blowing,[2] or by adjustments in the performer's lip or jaw positions. The singer however, is only limited at the extremes of his vocal range. Within that range his choice of pitch is theoretically unlimited from a continum of microtones. Since pitches within his vocal range are not organized by any physical restrictions, one finds in many of the vocal songs two and even three distinct variations on the same pitch, which in a transcription often translates into a greater number of tones. When the pitches used in a song are extracted and arranged in a scale, in some songs an almost chromatic scale results (e.g. #7; 13; 20; 29; 36; 38; 44). There is however no trace of chromaticism in the melodies themselves. As will be shown later, the use of semitones as melodic intervals is limited indeed. The selection of Pima songs (#33-44) clearly demonstrates the points made in the foregoing discussion. Most of eight flute renditions are based on four pitches and one song, on five.

The four vocal versions of these songs use five, six and eight pitches. The scale drawn from vocal version #36 consists of eight pitches all spaced half steps apart. The melodic intervals actually used in the song are mostly major seconds and major thirds. In the middle of the second phrase of the song the singer had shifted to a higher pitch level; thus, the rest of the song was sung approximately half a tone higher. This resulted in a larger variety of pitches in the scale of the entire song, while the melody was merely the vocal version of the preceding flute rendition based on five tones.

Types of Intervals used in the Scales (tables 2, 2a, 3, 3a). Examination of scales shows that the most common intervals in the scales are major seconds and minor thirds respectively. Some scales contain more than one minor third (e.g. #2; 4; 8; 9; 10; 22; 25; 27; 29; 45). In the Pima songs the major third is used in the instrumental melodies instead of the minor third. The vocal versions, however, do use minor thirds where the instrumental used major thirds. Since songs of all other tribes examined, both vocal and instrumental, used minor thirds and the Pima instrumental melodies are an exception, one is led to conclude that the particular flute on which the Pima songs were played may have had a built-in irregularity which the performer was not able to correct. The same performer did sing a minor third in places in which he played as major third in the flute melodies.

Overall Scale Patterns (tables 3, 3a). The scales extracted

from the songs exhibit two main types: 1) a scale system in which the interval between the first and second degrees in a third or occasionally a fourth, the rest of the intervals being mostly major seconds; 2) scales in which the interval of the minor third lies in a different place in the scale, mostly between the second and third degrees, preceeded and followed mostly by a major second. In others, the minor third is at the end, and is often the second minor third in the scale (e.g. 24; 27; 28; 29; 32). Examples of scales containing one minor third at the upper end of the scale: 17; 22; 45; 47; 48 etc. The differences between the two types of scales are clearly exhibited in the melodic patterns and cadences all of which will be discussed at a later stage of the study. To the first type belong ten out of the twelve Pima songs (33; 35; 37; 38; 39; 40; 41; 42; 43; 44), Kiowa 45; 47 (two out of three songs), Sioux 48 and Flathead #49. As discussed earlier, vocal versions of the songs often contain two or three variants of some pitches. If, in order to discover the underlying system, those closely clustered pitches are combined and viewed as one tone, more consistant scale patterns emerge revealing pentatonic formations. For example: #34 (Pima) is a vocal version of the instrumental song #33. In the vocal rendition the tones C and Db occur only once each at points in which the same melodic pattern used D consistantly thereafter. The basic scale, then, one which this melody is based is D F G A (or C Eb F G transposed on C), the four tone scale beginning with the leap of a third labeled above as scale type one. The same is true of #36, which theoretically

uses nine pitches; however, the melody, if sung without changes in intonation, uses only five. Thus the core scale for this song is C E F# G# A (transposed on C).

The second type of scale includes all of the flute and vocal melodies of the Northeast (Winnebago, Mesquaki, Chippewa and Fox) and the two songs from the Yuchi and Apache tribes. The scale structure of their flute songs is the most clear cut and consistant. The minor third is always between the second and third degrees (except in the two Chippewa songs). The rest of the intervals in the scale are usually major seconds. Both flute and vocal melodies from the Northeast demonstrate a pentatonic structure as the core of the tonal material. Tables 3, 3a illustrate that in the majority of the scales of these songs the lowest five tones follow a pentatonic pattern very common around the world, namely, C D F G A. Great variation exists in the number of tones and in intervalic relationships in the remaining tones in the scales, which constitute an extention of the basic five-tone system. This variation can already be detected in the intervals between the fourth and fifth degrees. Although the majority of intervals between these degrees is a major second (as expected in the above-mentioned pentatonic system) a significant number of scales deviate from the model and have other intervals (minor seconds, and occasionally even fourths). The deviation from this norm is particularly evident in the scales of the vocal melodies of the Northeastern and is, as mentioned before, perhaps due to greater flexibility in selection of pitch.

Mode (tables 4, 4a). In all of the melodies analysed a distinct hierarchy of pitch material is present. Usually three pillar tones act as gravitational centers to which other tones flow for temporary or final repose. Thus they are responsible for coherence and direction in the music. The tonic (T) has the strongest gravitational pull. As already stated, it often begins songs or phrases, ends phrases, and always ends the songs. Its frequency and duration also exceed that of the other tones. Two other secondary pillar tones (labeled 2, 3) usually exist in each song. (In songs using only four pitches there are usually only one or two pillar tones.) The secondary pillar tones may start or end phrases and also serve as points of temporary repose in the phrase. By creating a feeling of momentary repose they regulate the energy of tension and relaxation. They too are determined according to frequency and duration. Fig. 1 and tables 4 and 4a, demonstrate that in thirty seven out of forty nine songs the strongest gravitational point is the lowest tone of the scale. This includes the vocal and instrumental songs of the Winnebago, Mesquaki, Fox, Chippewa, Apache, Kiowa, Sioux and Flathead. The only group of songs in which the tonic is not the lowest note are the Pima songs. In all the Pima flute and vocal melodies the second degree of the scale constitutes the tonic. In two other Pima vocal songs the tonic is on the third and fourth degrees. In all of the Northeastern songs analysed, the second and third pillar tones appear to be consecutive and a fourth and fifth distant from the tonic (a discussion of the significance of these intervallic relationships is presented below--see section

on skeletal structure). In the songs of the Northeast the secondary pillar tones usually fall on the third and fourth degrees. The two are interchangeable and can be found at an almost equal rate on either the third and fourth degrees. In contrast with the Northeastern songs, in other tribes a much less regular pattern of secondary pillar tones is evident. In the Pima flute renditions, for example, the second pillar tone is on the lowest degree of the scale preceding the tonic. In the vocal Pima melodies however, the second pillar tone precedes or follows the tonic and in one case (the second vocal melody) the second pillar tone is on the fourth degree while the tonic is on the second degree. The only song of the Yuchi tribe, in this collection, is the most unusual in construction: its tonic is on the sixth degree, the last note of the scale. The second pillar tone is on the fourth (a third distant from the tonic). The third pillar tone is on the lowest tone and a fifth away from the second pillar tone. Many of the songs outside the Northeastern region do not seem to have a third pillar tone. Those songs in which a third pillar tone is employed it is usually located on the third degree. The majority of songs which do not make use of a third pillar tone are composed of only four or five pitches.

Range of Scales (tables 5, 5a). The range of the scales (songs) is fairly wide with the exception of those of the Pima. Both vocal and flute melodies all but these extend between a seventh to an eleventh, with the majority occupying octaves and nineths. The range of the Pima songs is by far the most limited:

the range is a fifth (diminished, augmented or perfect), and only one song occupies a major sixth.

Form (tables 6, 6a, 6b, 6c)

Repetition of material heard earlier in the song is a vital feature in the compositional process of both vocal and instrumental melodies. The prevailing form is iterative, a form which often contains paired phrasing. Thirty two out of forty nine songs have an iterative form. When paired phrasing occurs, only one or two phrases are repeated (e.g. 5; 6; 11; 13; 24; 26; 34; 35). Some songs are composed of two or three phrases only, one or two of which are repeated several times in the song (e.g. 4; 33). The remaining seventeen songs which are not iterative are equally divided between reverting and progressive forms. The reverting form too, is based on the principle of repetition so that this procedure is of great importance in the compositional aesthetic of flute songs.

Melody

Melodic Intervals (tables 7, 7a). A close examination of the melodies reveals the use of only a limited variety of intervals throughout the repertoire. Primes, major seconds, minor thirds and fourths are employed almost exclusively. Octaves, fifths and major thirds are utilized to a much lesser degree, other intervals are very rare.

In the flute and vocal melodies of all tribes examined, the prime and major second are the most frequently used (each occupying about a third of the total number of intervals). In the songs of

the Northeast, minor thirds and fourths are almost equally used and are second to primes and major seconds in frequency. Major thirds are very rarely used. In tribes outside the Northeast, thirds are employed more than twice as often as fourths. Major thirds occur frequently in the Pima flute renditions, while those of other tribes include only minor thirds. (As mentioned earlier the reason for this exception may be because of a built-in irregularity in the flute which the flutist cannot correct in performance.) The picture becomes more homogenous in the vocal renditions where all use minor thirds, including those from the Pima. The frequency of intervals larger than fourths drastically declines in all songs. Leaps of fifths are used much less often than fourths. For example in the vocal songs of the Northeast, 84 fourths are found but only 22 fifths. In the flute melodies of the same region 156 fourths occur, but only 34 fifths. Octave leaps are used rarely and leaps such as sixths and sevenths are even less common. An exceptional case is the Yuchi flute song #31 in which fourteen leaps of a seventh occur.

A cardinal aspect of the style is the distribution of melodic intervals in the song. An examination of the melodies shows that even the few intervals which constitute the majority of melodic movement, are not evenly distributed throughout the songs. Primes are employed mainly at beginnings and endings of phrases. They usually occur in series of three, four or more in a row, in long time values, thereby creating a strong feeling of repose (e.g. #1; 3; 5; 7; 19; 20; 32). A considerable number of primes is scattered throughout the songs as well; however, they

are of shorter duration (often eighth notes) and do not appear in chains of three of more as they do at beginnings and endings of phrases. They are thus not producing a static effect in the musical flow (e.g. 2; 4; 5; 6; 7).

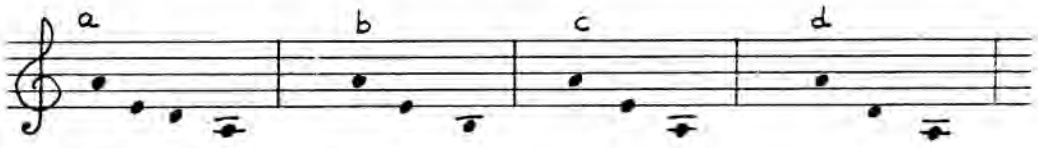
The use of octaves in particular is confined mostly to the opening portion of songs. There they appear in groups of two to four and act as an intoning unit. A few octave leaps can be found at the ends of phrases as well. In the Yuchi flute melody #33 mentioned above, the fourteen leaps of a seventh (an interval otherwise very rarely used in the rest of the repertoire) occurs at beginnings and particularly at endings of phrases. Since primes and octaves are by and large confined to beginnings and endings of phrases it becomes evident that the melodic movement is carried mostly by major seconds, minor thirds and fourths respectively.

The almost total absence of minor seconds and major thirds as melodic intervals (with Pima flute renditions as an exception) supports the assumption that two pentatonic systems, namely C Eb F G A and C D F G A are the core of this style. Most of the melodic activity centers around the above tones and the relationships among them. Each of the performers usually did not use major thirds, even though they could have easily created them by "skipping a tone in the scale." Instead they chose minor thirds almost exclusively, which constitutes the "gap" naturally present in both pentatonic constructions. Similar is the case of minor seconds which is not present in the above mentioned two types of pentatonic models.[3]

The Skeletal Structure of Songs (Fig. 2). The extraction of skeletal tones from the songs proves highly instructive in demonstrating the principles upon which the melodic forces in this repertoire operate. The majority of the songs are constructed of tetrachords and/or pentachords. A small number of phrases in some songs is built on trichords combined with tetrachords or pentachords. Each phrase is based upon tetrachords, pentachords or sometimes trichords. It usually involves a combination of at least two of the above.

Among the chief structural techniques is the use of two disjunct tetrachords (a) (e.g. #2, third phrase; 5, second phrase; 6, first phrase; 7, second phrase; 9, fourth phrase; 20, third phrase).

Example 1



A less common combination consists of two conjunct tetrachords (b), (e.g. #8, second phrase). Another common structure shows a tetrachord and a pentachord in a conjunct position (c). The tetrachord is usually above the pentachord (e.g. 20, second phrase; 15, fourth phrase; 2, fifth phrase; 3, second phrase). Occasionally however, the pentachord is positioned above the tetrachord (d), (e.g. 10, third phrase; 11 third phrase; 12 second phrase). A large number of phrases in the songs are composed of portions of the above formations, and often of a

combination of two or more. For example, in #15, the second tetrachords are (from above) A-E and D-A. In the second phrase they are again found, but not in the usual order. A-E is established first, then the lower tetrachord D-E is interrupted by a return to E, so that the lower framing interval becomes a pentachord.

In song #17 most of the first phrase centers around the bottom range. The upper tetrachord is briefly established (A E D E) and the rest of the phrase emphasizes the lower tetrachord D-A. In song #23 several phrases center mostly around the lower pentachord. The sixth phrase seems to combine a tetrachord C-F and a pentachord C-G. Other examples of varied combinations are all of #24; #1 third, fourth and sixth phrase; #7 second phrase; #9 fourth phrase.

In a number of songs a different type of structural relationship at first seems to exist. Some structural tones relate to one another by thirds. In the Chippewa song #30 for example, the third pillar tone relates to the tonic (below) and second pillar tone (above it) in thirds. It seems justifiable to assume, however, that these relationships are no deviation from other phrases or songs. The above mentioned Chippewa melody is constructed on a pentachord which rests on the tonic and second pillar tone relationship. In the course of the melody this pentachord is clearly divided into two nuclei of thirds which reinforce and center around the upper, then the lower third of the pentachord. Also in many of the Pima melodies, phrases are based on relationships of thirds. Since the range of these songs

is usually limited to a fifth, here too the pentachord is broken up into two, reinforcing each half of the architectural frame. In the Pima songs therefore, pillar tones tend to have a much less prominent role, while emphasis on the extreme fifth is the main concern. During the process of establishing the framing fifth each tone becomes a momentary center, is established, then abandoned in favor of another (e.g. #33 first, second, fifth and sixth phrases; #35, second, fourth and sixth phrases, #39, the first five phrases; #40 the first, second, sixth and seventh phrases; #41 first three phrases and the sixth and seventh as well).

From earlier discussions, and on the basis of the information in tables 4, 4a, 7, 7a, and Fig. 2, one may postulate that the underlying principles of the architecture of the flute music style analyzed (including the vocal renditions), are founded upon relationships of fourths and fifths. Within frames of tones separated by fourths and fifths other intervals, mostly smaller ones, fill in or circumvent these structures. Reinforced by rhythmic patterns these intervals serve as the dynamic force carrying on the movement. All of the above becomes evident from the evaluation of the place of pillar tones, the use of melodic intervals; the skeletal layout of each song and lastly, the extraction of pitch material to form scales. The music is based on the interaction between two forces: 1) the constructive intervals (fourths and fifths) which create stability and goals, 2) content intervals (primes, seconds and thirds) which are responsible for the lacing-in of the melodic movement. The two

forces balance one another in the constant play of movement and repose, tension and relaxation.

Cadences (tables 8, 8a, 9, 9a). All songs examined for the purpose of this study exhibit the use of cadential patterns at the end of phrases and songs. Several types of cadences dominate the entire repertoire. One may distinguish Final cadences from Non-Final cadences. Among the final cadences two main formations are common: descending and undulating.

The most common type of final cadence is descending. The last three tones in a song or phrase simply descend to the tonic in the order 3-2-1. This type found in all of the Winnebago and Mesquaki songs, in nine out of ten songs of the Fox Indians, in the vocal renditions of the Chippewa, both Kiowa songs, the Apache and one Pima flute rendition. Thus, thirty three out of forty nine songs end with this type of cadence. In the majority of the songs ending with a descending final cadence the penultimate interval (between the third and second degrees), is a minor third, and the last interval (between the second and first degrees), is a major second. The melody comes to a repose first by a leap of a third then a step of major second to the tonic. This type appears at the end of the following songs: all seventeen Winnebago songs, four (out of ten) songs of the Fox (two instrumental and two vocal), and one Chippewa song (vocal). This formula, as shown, is most common in the songs of the Northeast. A second version of a descending cadence is constructed in reverse order from the one just discussed: it first moves with a step of a major second between the third and second

degrees, then a leap of minor third between the last two tones of the song. An example of this cadence can be found at the end of the Apache song, and all three songs of the Kiowa. The second main type of final cadence is undulating. Most such cadences are constructed in A B A form, where the first and third tones of the cadence are of the same pitch (tonic). This kind is found at the end of the Chippewa flute renditions, the Yuchi songs, most of the Pima songs (vocal and instrumental), and the Flathead song. The majority of the undulating cadences, end with a leap up which gives a somewhat less final impression than if it had ended with a descending interval. In the Yuchi song the final cadence is particularly unusual. The song and each phrase end with a VI - I - VI cadence leaping a seventh between the sixth and first degrees, (the sixth degree being the tonic of that song!). In most undulating A B A cadences the leap is of third (usually minor third). The tonic is often the second tone in the scale and not the lowest. This is found in most of the Pima songs. In the Sioux song the final cadence in A B A form leaps down a fourth to the tonic. (The interval between the first and second degrees is a fourth.)

As discussed above, the majority of the phrases and all songs end with one of several types of final cadences. In a few instances where one of the patterns of final cadence does not occur, another type of cadence prevails. This cadence, which is used only in internal phrases and never at the end of a song, end either on the second or third pillar tone (similar in concept to the Western half cadence ending on the dominant or a plagal half

cadence terminating on the subdominant).

Approximately half of the non-final cadences end with a leap up even in songs of those tribes in which all final cadences descend. For example, in both Chippewa songs. It seems that in all songs, except in those of the Pima the composers and/or performers had felt that a cadence with a downward ending gives a more final feeling to a phrase or song. In the few examples of an ascending cadence in songs other than those of the Pima, the cadence is always internal, non-final, which by nature creates a less complete effect than a final cadence at the end of a song. Most of the non-final cadences follow the A B A form as well. Ascending non-final cadences, by and large, end with a major second up. Only a few end with an upward leap of a third (e.g. all Chippewa songs end with a minor third up; see also Pima #44, third phrase). Both types of cadence final and non-final, again, support the conclusion presented earlier pertaining to the role of fourths and fifths in the architecture of the style. Final cadences, as has been demonstrated, end on tonic while non-final cadences end on the second and third pillar tones most of which relate to the tonic in fourths or fifths.

Phrase Range and Function. Within each song phrases are usually of approximately equal length. Treatment of range is intimately linked with the architecture of the phrases. Some phrases emphasize and establish the upper tetrachord, pentachord; others, the lower. Thus a phrase will be limited to the upper fourth, fifth or third and often extend slightly higher (e.g. #1, phrase a, d^a; 2, phrase b), or it will restrict itself to either

the lower tetrachord or pentachord. Here the total ambitus can extend up a bit in the process of surrounding and establishing the core of the range (e.g. #2, phrase d, d'; 21, phrase C^a).

The great majority of phrases, however, cover the entire range. In such phrases the range is again treated according to the principles described above: the first part of the phrase will usually elaborate on the upper tetrachord or pentachord, with a possible upward extention, and the second half of the phrase will concentrate on the lower tetrachord, pentachord, or trichord (e.g. #2, phrases C^b, b'; 4, phrase b, b^2; 5 phrases a, a', a^2; 7 phrase b; 9 phrase d).

In a number of songs a still different type of phrase appears, located at the beginning. Such a phrase is usually short and consists of octave leaps between the tonic and its upper octave. The emphasis is on the low tone--the tonic. This particular type is found in the flute melodies exclusively and is absent in the vocal renditions (e.g. 2; 4; 6; 9). In some flute melodies the first phrase is a combination of the above-mentioned types. Its first few notes will dwell on the framing octave, then proceed to introduce rhythmic and melodic material (e.g. 8, 12, 24).

Double and Triple Cadencing. Several of the types of final cadences discussed above are often reiterated two or three times consecutively at the end of phrases and songs. This may occur in any phrase in a song, not necessarily a final one (e.g. 3 phrases a, a^2; 5--all phrases, 7 phrases a, b; 10 phrase b; phrase 23 a, a'; 24 a, a'). The role of a recurring cadence seems to be to

extend phrases for the sake of balance or to reinforce the lower tetrachord (or pentachord). Of course, one can only speculate regarding the function. The repetition of cadence is often not verbetim but frequently involves alteration, abbreviation and sometimes elaboration of the original version. The most frequent repetitions of cadence can be found in the Winnebago and Pima songs. In other tribes this feature is less often used.

Contour. The general nature of contour in the flute songs can be described as a collapsing melodic line. In the majority of the songs, each phrase is reached its highest pitch shortly after the beginning and usually by a few wide leaps. The larger portion of the phrase gradually descends to the lowest point. This is particularly evident in phrases which use a wide range, possibly the entire range of the song. See #3, phrase "a" (three ascending intervals, eight descending); #7 phrase "a" (four ascending and ten descending); #13 phrase "a" (four ascending seven descending); phrase C^a (four ascending, twelve descending).

In the Pima songs, melodic range is much narrower and treated differently. Contour is undulating and ordinarily uses the entire range (e.g. 34; 35; 37).

Rhythm

Tempo. Most of the songs in this collection are performed in a moderately slow tempo, what Western musicians might consider as Andante (ca. ♩ = 76). Meteronomic speed is easy to determine in most songs, because of a recurring and mostly even pulse which seems to dictate the pace. In spite of a seemingly clear cut

case for meteronomic evaluation of speed, it is very likely that Indians perceive some of these songs as faster or slower than Westerners judge them to be. They may judge speed of music by some other criteria, or by what Kolinski (1960) and Christensen (1960) term "inner tempo." However, a regular pulse does exist in most songs and the length of this regular unit is what is here measured. If the question, how do Indians perceive tempo in the songs, were under investigation here, one would have to raise the same question for other aspects of the music treated here. In that event, it may be suspected that, from the point of view of the Indians themselves much of the analysis is invalid or irrelevant, but it is still thought to provide Western ethnomusicologists some insight into this music.

The recurring pulse in the songs in this collection does seem to be a measuring device. The basic pulse is constant, and is always resumed after other rhythmic figurations were used.

In reference to inner tempo one point may be added. The great majority of the songs seem to have similar inner speed as well. With some exceptions many of the tones assume the same time value as the pulse. In one case, however, inner pulse greatly differs from the general obvious outer pulse: in the Yuchi song #31 quarter-note pulse is present in the first phrase. Beginning with the second phrase through the end, between tones of long durational values (i.e. half note or three quarters), runs of fast 32nd notes fill in, in an arabesque style. Two different tempi operating at the same time therefore govern this song. In Western culture such a song would be viewed as slow by the same

token that the first section of a Baroque French Overture is viewed as slow, despite the fast runs which appear between notes of long duration.

Meter. Even though a regular pulse does exist in the songs, with only two exceptions regularly recurring patterns of accents do not exist. In the Chippewa vocal versions (#29) however, the vigorous and regular accentuation could, with a few adjustments, be notated in $\frac{4}{4}$ meter, starting the song with an upbeat (the song is also unique in having drum accompaniment--the only one in this collection). The tempo of this song is faster than that of most others. The second exception is a song from the Sioux (#48--an instrumental version). Here too, with a small number of modifications the song could be notated in $\frac{3}{8}$ meter, because of regular patterns of accents.

Rhythmical Patterns. In all except the Pima songs, a fairly large variety of rhythmical vocabulary exists. The rhythmical activity, however, is tightly linked with the melodic structure and the process of tension and relaxation, and plays an important role in achieving them. Each phrase is initiated and closed with several beats of longer time value. Phrase endings in particular, while resolving pitchwise to one of three pillar tones (mostly tonic), resolve rhythmically as well, using long durational values (e.g. end of 4; 6; 8; 9; 11; 21; 31; 32).

As stated above the distribution of rhythms is usually such that the main activity occurs in the body of the phrase. For example: Winnebago song 8. The second phrase $a'^{(+)}$ starts with

a long tone on the tonic. Thereafter a variety of rhythmical combinations were played, most of them involving dotted rhythms. The phrase ends with the typical final cadence discussed before, repeated twice. The cadence utilizes long tones. Another common rhythmical idiom is syncopation, of which considerable use is made in most songs, particularly those of the Pima. It too is used in the course of a phrase to promote movement. In the Pima melodies, however, rhythmical variety is very limited averaging three or four different time values (as opposed to six to eight in most other songs).

Performance Style and Techniques

Performance practice in both vocal and instrumental flute songs does not seem to be highly specialized. As testified by Indians in many different occasions, it is not the manner of performance which determines a performer's competence, but his memory and command of a large repertoire. His ability is measured in a historical sense, pertaining to contribution and perpetuation of the tradition. Such an attitude is of course not unique to the American Indians, but is shared by many peoples around the world. The American Indian's approach to performance is clearly reflected in the flute songs of this collection (vocal and instrumental). Variety and manner of articulation, dynamic level, tone production, tone color and other aspects of performance do not seem highly developed. A code of performance practice does not emerge after a thorough analysis and in only a few aspects does the instrumental

performance differ markedly from the vocal. The few differences between instrumental and vocal styles, as will be demonstrated in the following pages are mostly bound to the physical properties of either performance means and not to a deliberate stylistic choice.

Dynamics. Dynamic range is extremely limited. In the vocal versions, a fairly soft dynamic level prevails from beginning to end of each song. In the flute melodies the lowest tone is almost always played louder than the rest. It is difficult to determine whether a louder sounding bottom tone is a matter of style or results from the structure of the flute. It is suspected however, that this stems from an accoustical property of the flute. In the Western flute, for example, it is difficult to produce the lowest tone without increasing the air pressure. The American Indian flute may have a similar character. The Indian performer may have to blow harder when playing the lowest tone. Except for the lowest tone, the flute versions are all played at a moderately soft dynamic level, about equal to the vocal level. The dynamic range in the flute is by nature quite limited. A high intensity of air will result in overblowing. (This technique is often used in the opening portion of a song where intoning takes place, as discussed earlier.)

The human voice, on the contrary, potentially encompasses a wide range of dynamics; from a whispering soft to a screaming loud. It is therefore an intriguing question to inquire why, in both vocal and instrumental performance, the same soft dynamic level is used. The large majority of the songs are love songs,

and one may speculate that a calmer, softer singing or playing style may contribute to the general effect of the situation. As discussed in the first chapter of this study, flute music, traditionally, was viewed as hypnotic. Possibly a soft dynamic level may have been felt as partially responsible to the hypnotizing effect. This speculation seems questionable however, in consideration of the fact that some flute songs are prayers, invocations for rain in a ritual, and others are songs performed before going to war. A second fact shows the above reasoning unlikely: lullabies are often sung in a loud and shrill voice, despite their role as musical "sleeping pills." It is therefore more likely that the relatively unimportant role of dynamics level results in a convenient mp dynamics. Of course, vocal imitation of the flute is also a possible explanation.

Articulation. Articulation in the vocal songs is presumably in part determined by the text. All vocal songs in this sample utilize a lexical text and no special syllables such as are common in Peyote songs, for example. In the flute renditions however, the art of articulation is tested, for it is presumably not governed by non-musical elements. A close analysis reveals that very little concern is attached to articulation. Phrases are for the most part slurred; however, occasionally individual tones are tongued. There seems to be no particular patterning in the distribution of the tonguing. Even the need to inhale during a performance does not effect articulation, for most phrases are sufficiently short that they can be played in one breath. Many phrases contain short pauses which allow the

performer to take a breath. Also, since these songs are played and sung softly, less air is consumed then if they were performed loudly.

In the process of slurring the performer will occasionally slide from one tone to another, in either vocal or flute performance regardless of the size of the interval. Glissandos may cover a range between a second and sixth (e.g. #1 first phrase; 5 first phrase; 11, 30). This mannerism is often found in the cadence of a phrase or a song (e.g. 1; 2; 4; 5). Glissando is used to a large extent in the Winnebago songs, and only occasionally in songs of other tribes.

Instrumental Techniques. Among techniques used in performance of wind instruments, in many cultures, a wide variety of tonguings exists. Tones can be attacked sharply and aggressively, gently, or they can even be started without any clear attack. Thus a tone is "sneaked" into as if emerging out of the mist. Between the above-described tonguings a number of intermediate shades exist, and much of the performer's practicing time is devoted to learning to achieve and control these distinct types of attacks. In the collection of songs in question, no such distinctions in tonguing is recognizable. All tonguing is done similarly: it is light but clear, with no extraordinary force attached.

Pulsation. One of the trademarks of many American Indian singing styles is the use of pulsation. In this collection, too, pulsation is utilized in both flute and vocal renditions.

Pulsation in the vocal melodies is slow and resembles tied quarter notes sung at the same pitch. In the flute songs pulsation takes the shape of fast vibrato. It is exclusively performed on the lowest tone, at the ends of phrases and songs. (Pulsation is marked in the transcriptions with dots below the tone.)

Grace Notes. Apart from differences in pulsation speed, the major difference between the vocal and flute styles is the use of grace notes in the flute melodies. These notes are the result of a deliberate choice by the performer and do not stem from mere physical construction. Grace notes are of extremely short duration, played before or after a note, and are always slurred to it. As a rule single grace notes are used, with only a few exceptions. When more than one note is employed, it usually appears before the main tone and slurred to it (e.g. 25, phrase b^3; 35 (beginning); 36, phrase d). On close examination there is a wide variation in the relationship of a grace note to its attached main tone. Variation pertains to pitch level, position and interval. Grace notes can appear above or below the main pitch, before or after it. Intervals range between major second and an octave. The most common grace notes are at two extremes: octave leaps and major seconds. Octave leaps are most common at beginnings and endings of phrases and songs and are almost exclusively used with the tonic as the main tone. Where octave leaps occur the grace note will appear most frequently after the main tone (e.g. 2; 4; 8; 9). In the Kiowa songs, 45; 46 that interval is a major seventh and it is suspected that there was a

slight imperfection in the structure of the flute which changed the tuning a bit. Above the tonic A, the grace note is a high $G^{+}\#$. This imperfection of intonation is reflected in the main tones of the melody as well, and thus, occasionally, when the performer blew harder, he reached the A (see fourth phrase). In the vocal version of song 46, (vocal 47) the singer clearly sings an A above the tonic A. When the interval between a grace note and the main note is a major second (never a minor second!) it most often precedes the main tone. This is particularly common in all the Pima flute songs, but found elsewhere as well. (For examples other than Pima, see #6; 14; 19.) Other common intervals are minor thirds, fourths and sixths (e.g. 2; 4; 6; 21; 23; 24; 27).

Although the application of grace notes to main tones is quite varied, it is clear that the hierarchy of tones in a given song extends to the use of grace notes as well. Analysis shows that, with only a limited number of exceptions, grace notes are usually applied to structural tones. Thus, in #2, grace notes relate to tonic (A), the "A" above it and to "E" (second pillar tone); in 4, similarly also the "D"--the upper note of the lower tetrachord--is preceded by a grace note. In #6, F, E, the structural tones, and the low A (tonic) followed by grace notes; in #26, the low "C" (tonic) G and F (structural tones) are preceded and followed by them. Such is also the case in 45, 46, and others.

In the discussion of grace notes, they were not viewed simply as ornamental tones. They may be called grace notes due

to their character and style. It is, however, doubtful whether they are to be considered as "mere" ornaments or worse, "unessential." The question of the boundary between "ornamental" and "non ornamental" tones will, most probably, continue to plague musicologists and ethnomusicologists forever (see Nettl 1974).

The foregoing discussion of the use of grace-notes in the examined flute repertoire leads one to conclude that they are indeed essential and contribute to structural stability as well as rhythmical dynamics. A comparison between the vocal and flute renditions illustrates that the grace notes are part and parcel of the flute style. They are not used in the vocal style, only in the flute songs. As mentioned earlier, grace notes are attached to specifically important tones in the songs, namely strutural tones. These pillar tones are distinguished from others in position, duration and frequency and as now concluded, also by being reinforced and surrounded by grace notes.

Bird Calls. In the opening chapter of this study dealing with the symbolism of the flute, it was shown that the visual appearance of the flute is an integral part of its role as an instrument possessing special power. As discussed, not only were flutes decorated with colored geometrical figurations and other symbolic drawings, they were often given the shapes of animals. Sometimes the flute will terminate in a wooden carved animal's head. Flutes which were specifically made for courting, in many cases, were decorated with a bird's head. Others were often ornamented with a horse's or snake's head. The connection of the flute with animals and specifically with birds is

manifested in the flute music as well. A significant number of songs in this collection end with a bird call. In this widespread custom the performer will use either his voice or the flute to perform the call which often assumes an indefinite pitch (marked in the transcriptions by square heads). Since a bird's chirp is usually of high pitch, one finds that in the songs, imitation of a bird call is usually performed on a much higher pitch than the last pitch of the song. The interval between the last pitch of the song and the bird call is often a seventh or an octave (e.g. 1; 10; 13; 14; 24; 25).

Whereas in the vocal renditions the call is of indefinite pitch and sometimes utilizes falsetto (e.g. 1; 10; 13) in the flute melodies they can usually be notated precisely (e.g. 9, 12, 27, 46, 48).

In the course of time, bird call in the songs seems to have undergone changes. In some melodies instead, of the traditional call, it is possible to detect remnants of the call. In such cases, after a final cadence in a song, one or more short and soft tones are heard of what seems a group of random tones improvised according to the performer's mood at that moment. For example, in song #2 from the Winnebago after the final cadence (ending on the tonic A) two short and high tones end the song. Similar is the case of the Winnebago song #9. In a flute melody of the Fox, #21 the song ends with the common final cadence on tonic (C); however, the cadence is then followed by two short and soft tones. Finally, in some songs, the bird call seems to have shrunk to only one short tone, as in 4 and 46.

* * *

An attempt was made in this thesis to provide the groundwork for a more extensive study concerning the flute music of the North American Indians. A number of questions about flute and flute music remain unsolved and would require the discovery of more substantial data and recordings. In order to establish whether flute music in each tribe constitutes a style of its own, it would be necessary to examine a much wider sample of recordings made at different times, and played by a variety of performers within each tribe. Furthermore, within each tribe the flute repertoire should be compared to other repertoires. If after the examination of a large amount of data the existence of a distinct style of flute music per se were to be confirmed, a worthwhile study would then be to compare flute songs used in different cultural contexts.

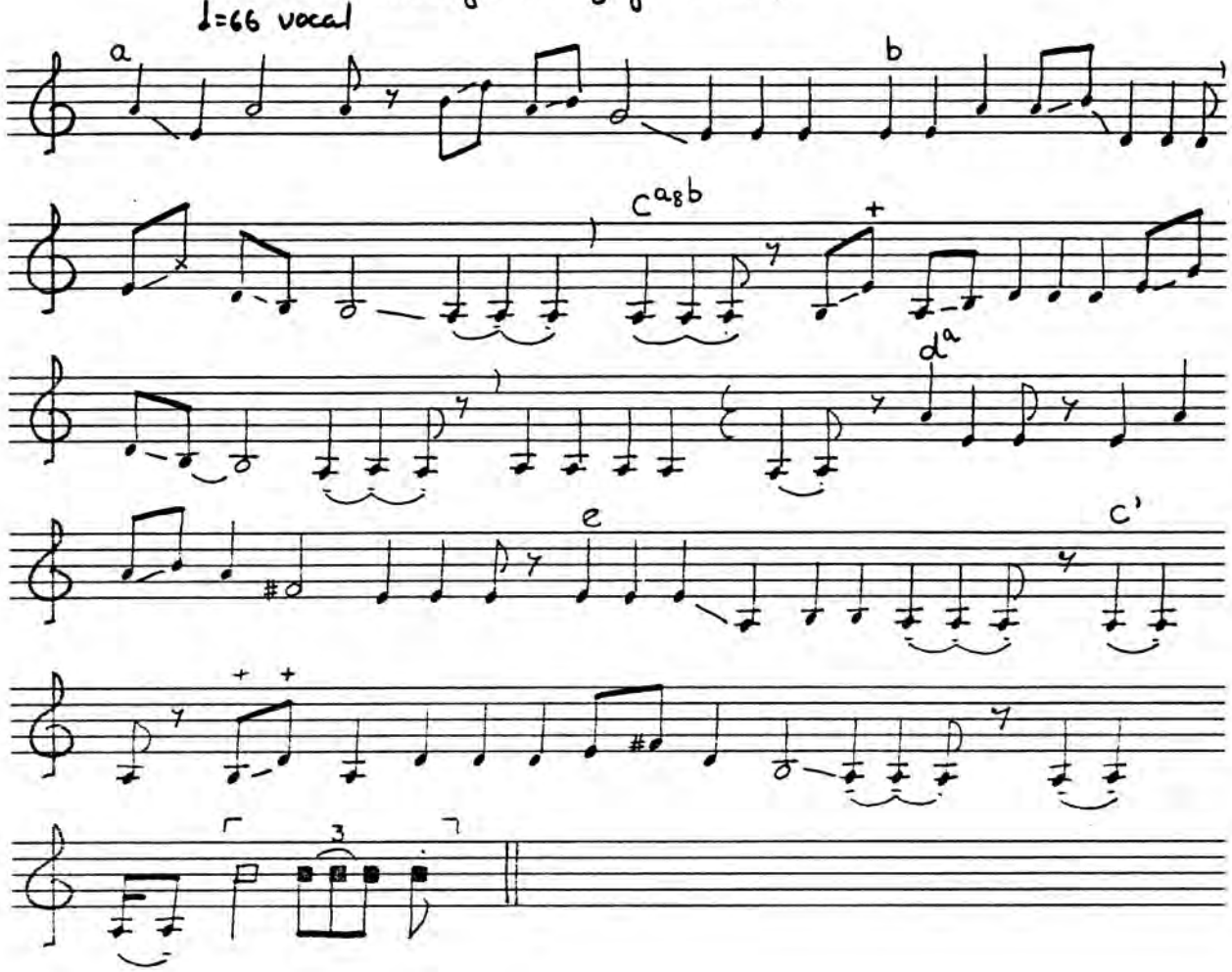
Notes

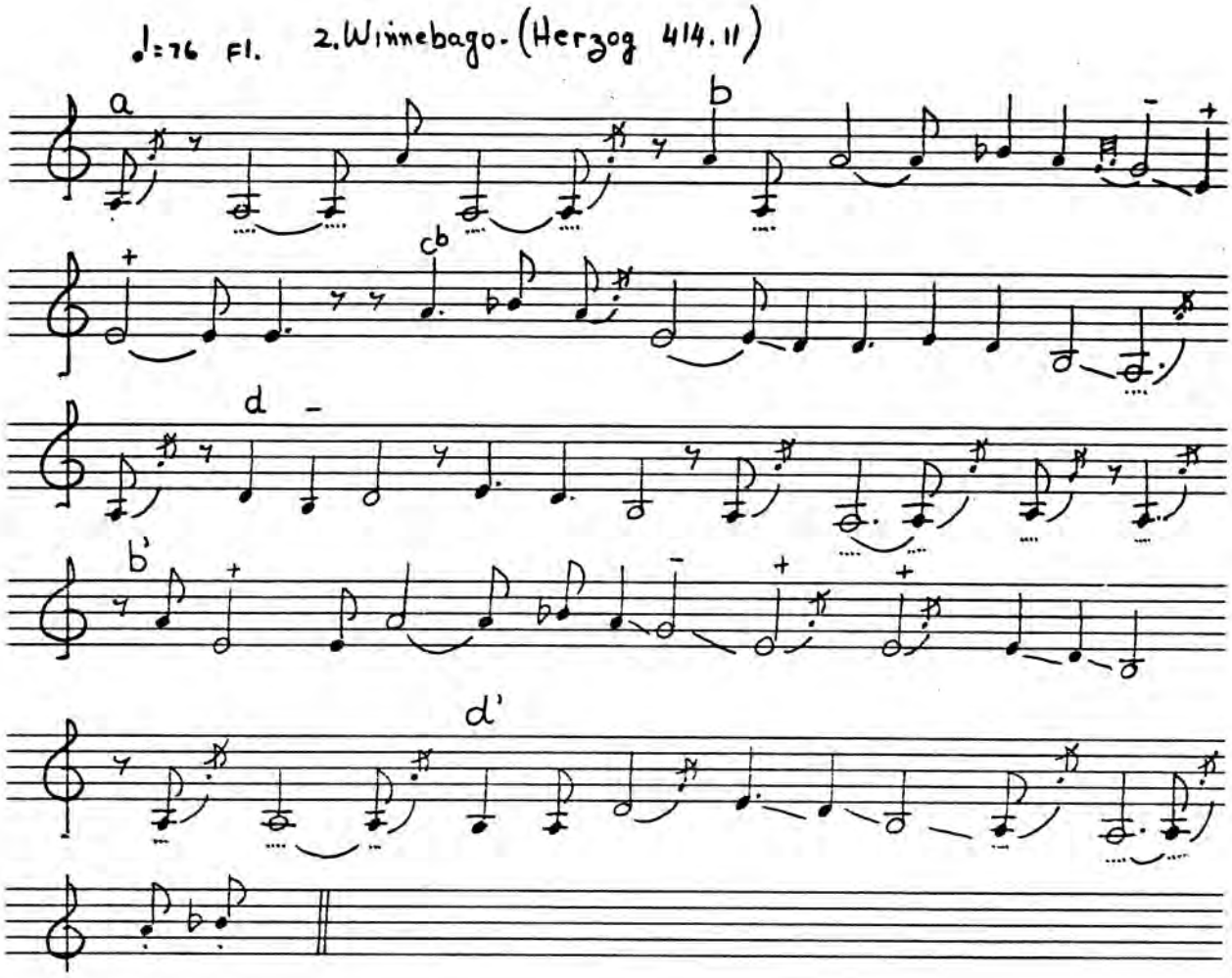
1. In Western music too, a song may not necessarily use the entire range of the scale, or may use a tone only once, but would not, for this reason alone, be considered as based on a different scale.

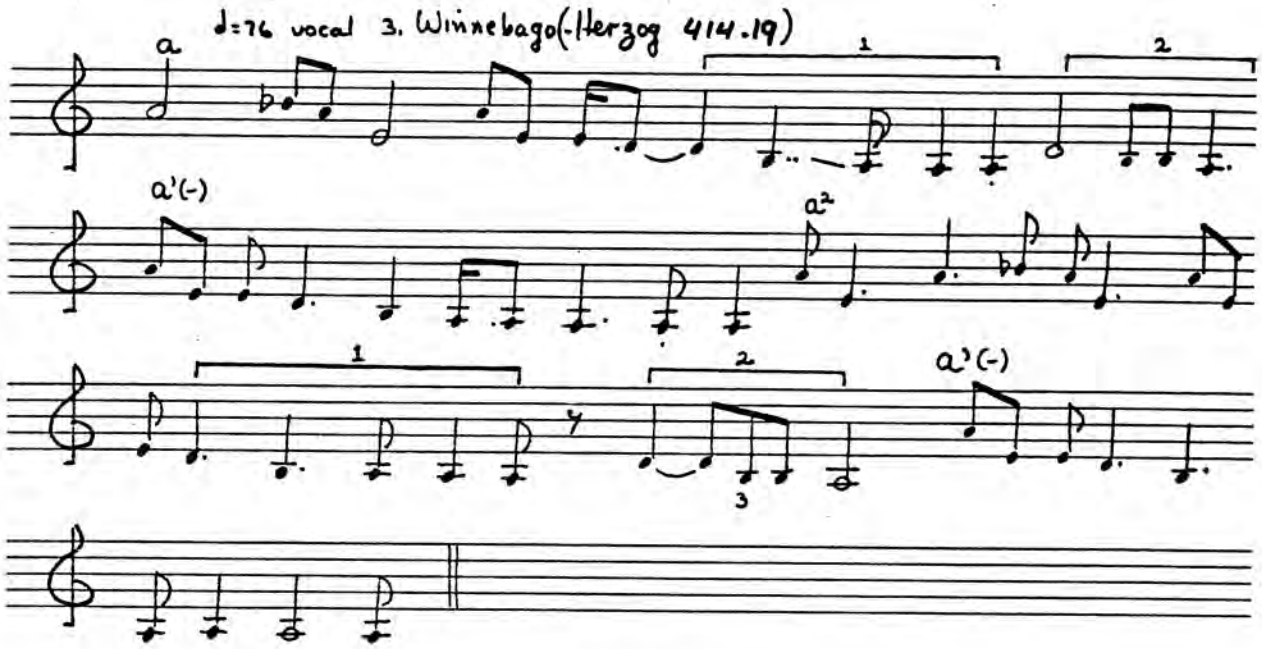
2. By increasing the intensity of air flow, the pitch rises.

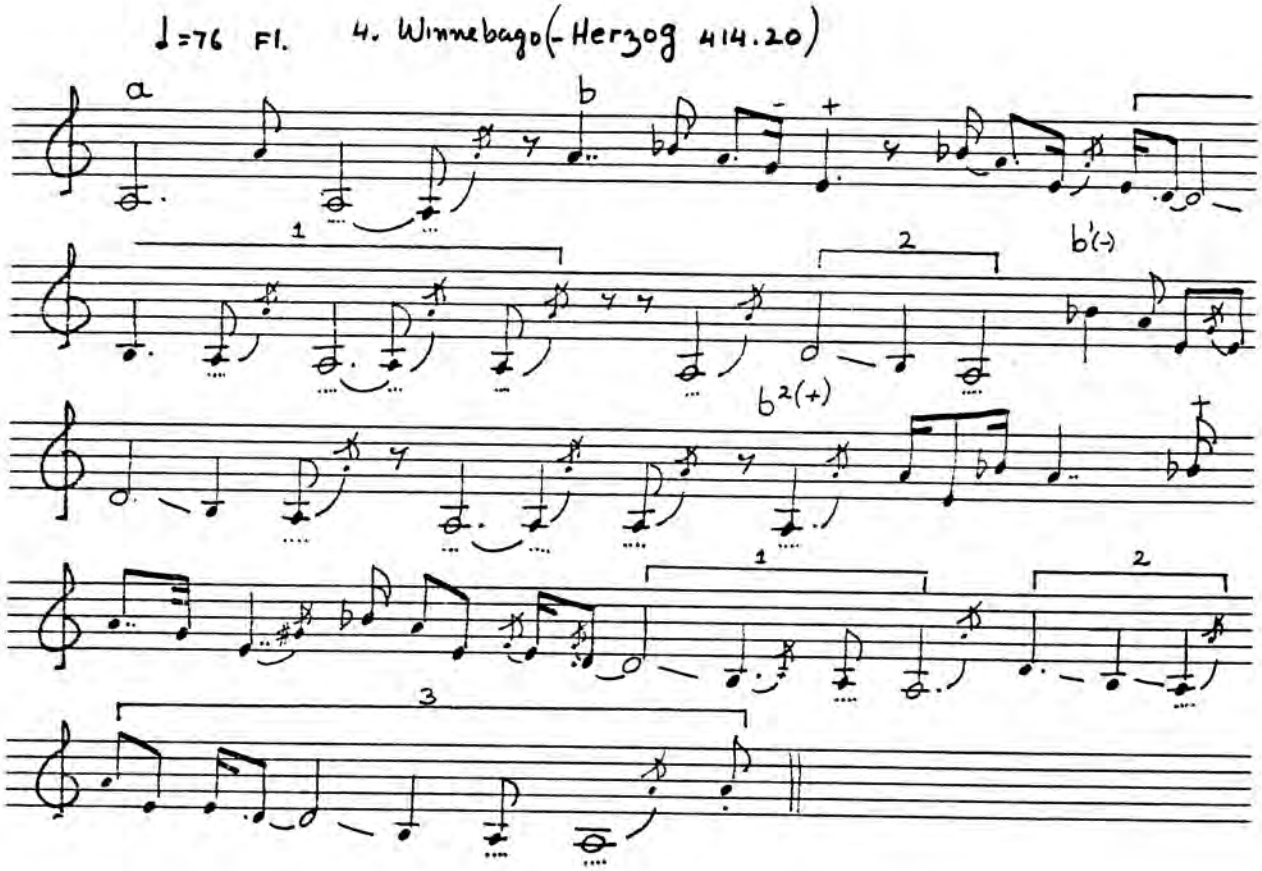
3. The subject of chromaticism was discussed on p. 27-28.

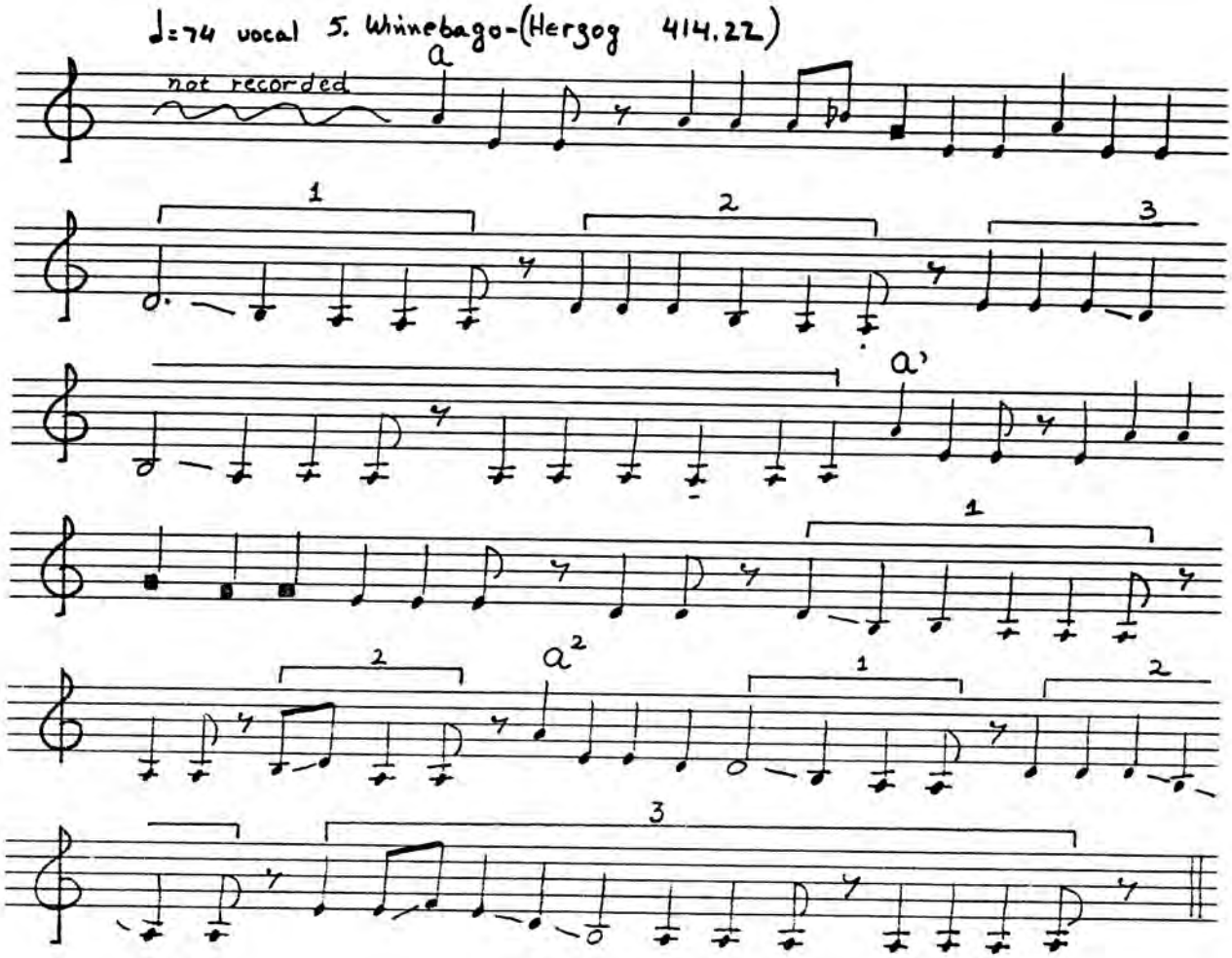
1. Winnebago-(Herzog 414.10)



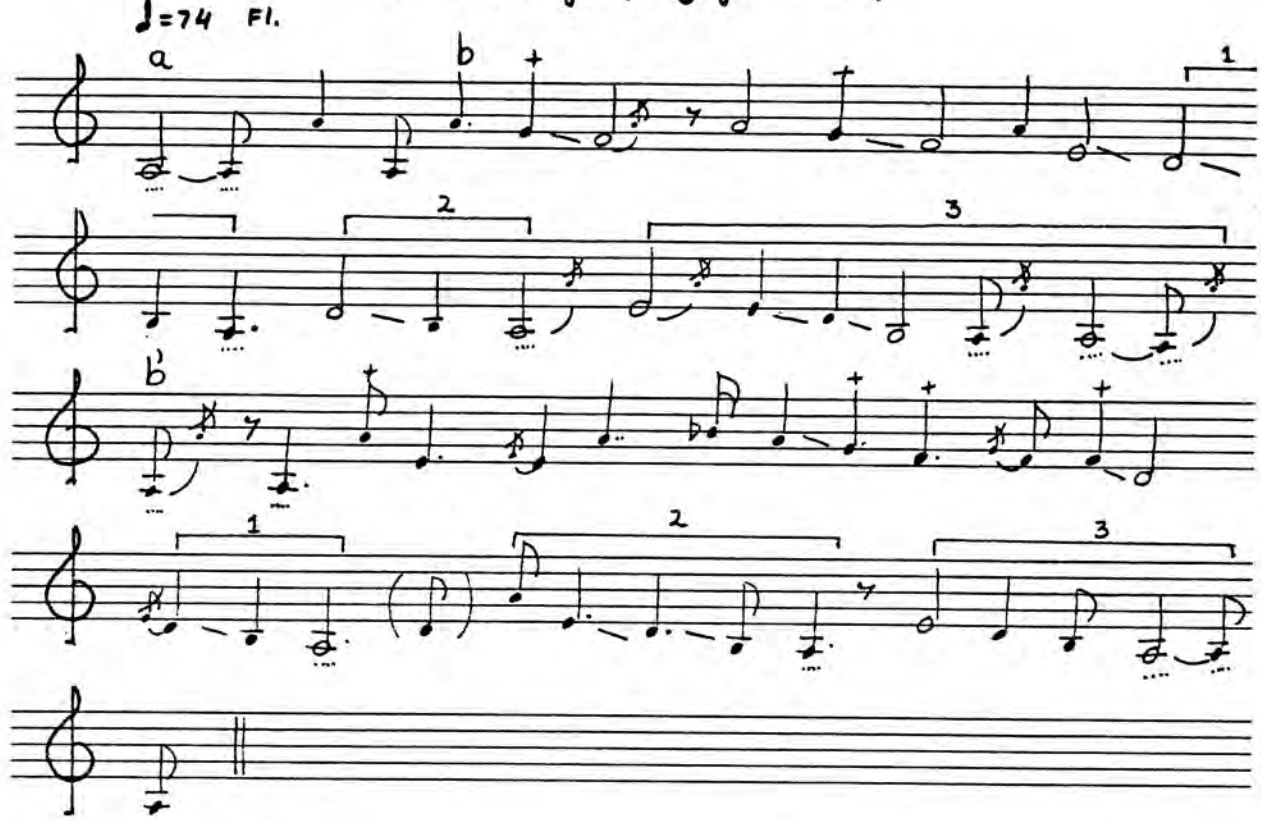

♩=76 Fl. 2. Winnebago. (Herzog 414.11)
a
b
cb
d
b'
d'


♩=76 vocal 3. Winnebago(-Herzog 414.19)
a
a'(-)
a²
a'(-)

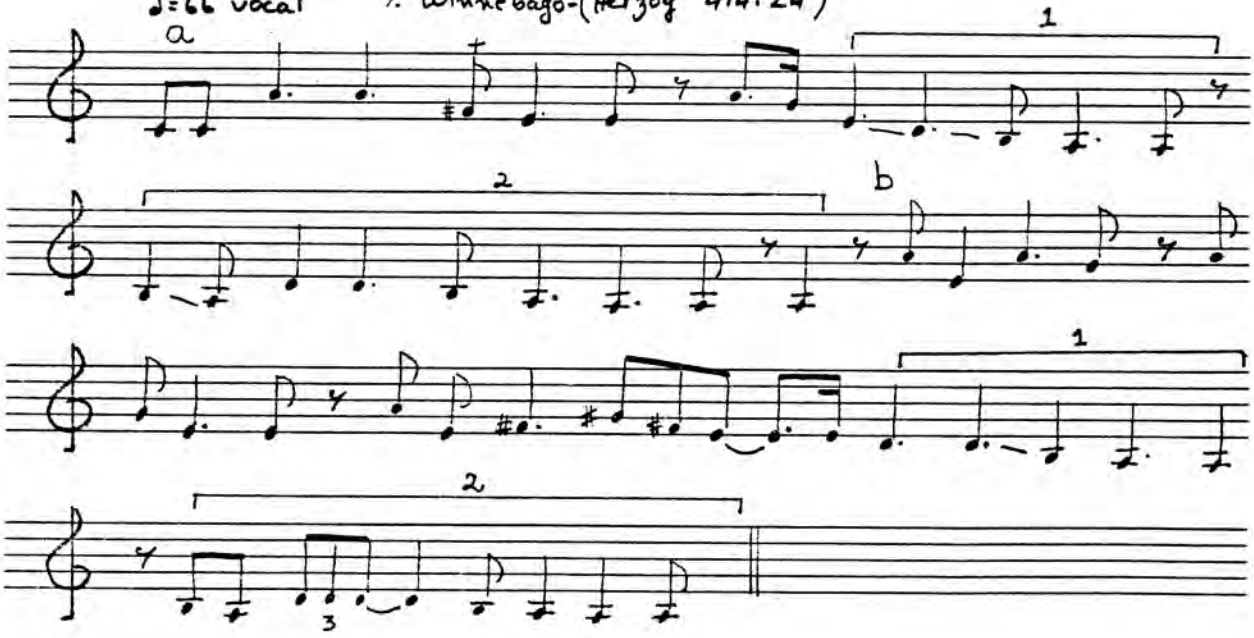

♩=76 Fl. 4. Winnebago(-Herzog 414.20)
a
b
b'(-)
b²(+)


♩=74 vocal 5. Winnebago-(Herzog 414.22)
not recorded
a
1
2
3
a'
1
a²
2
1
2
3

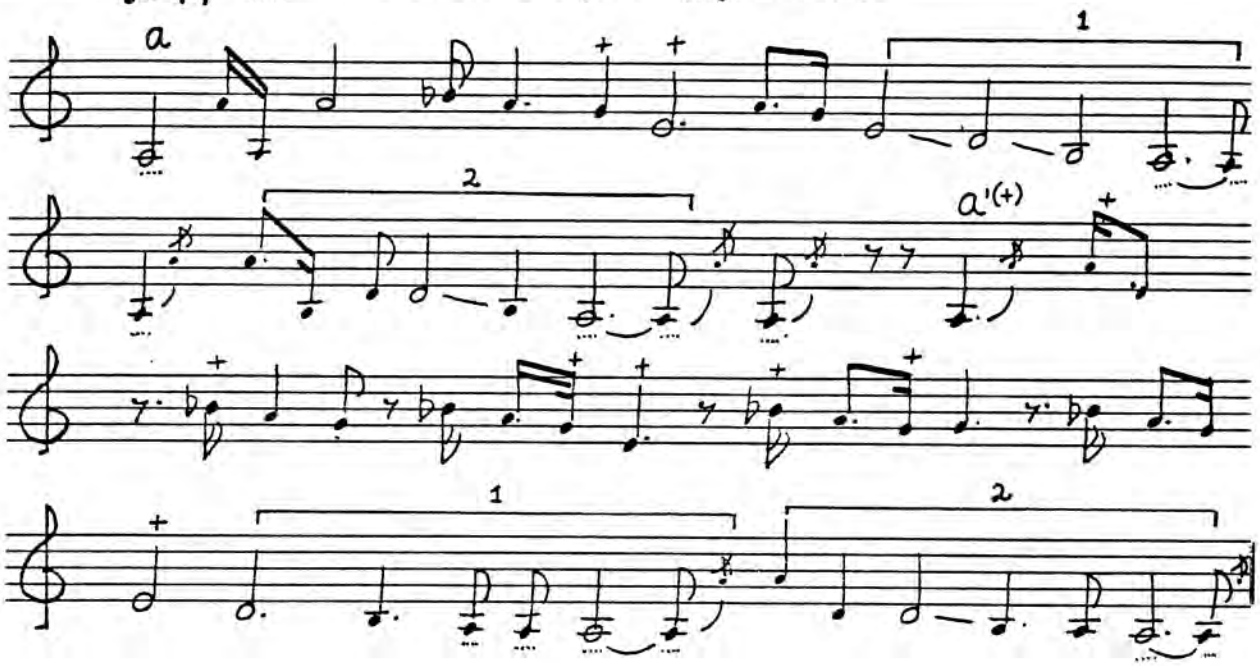
6. Winnebago-(Herzog 414.23)



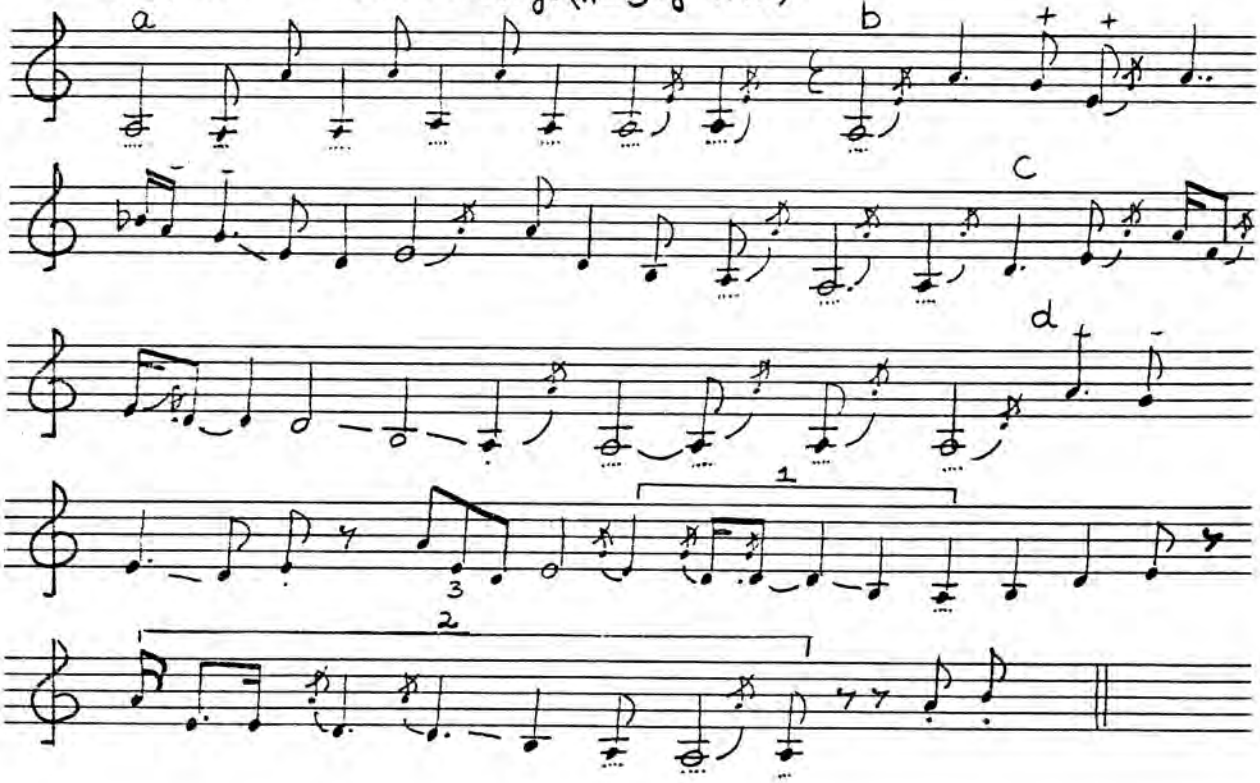
7. Winnebago-(Herzog 414.24)



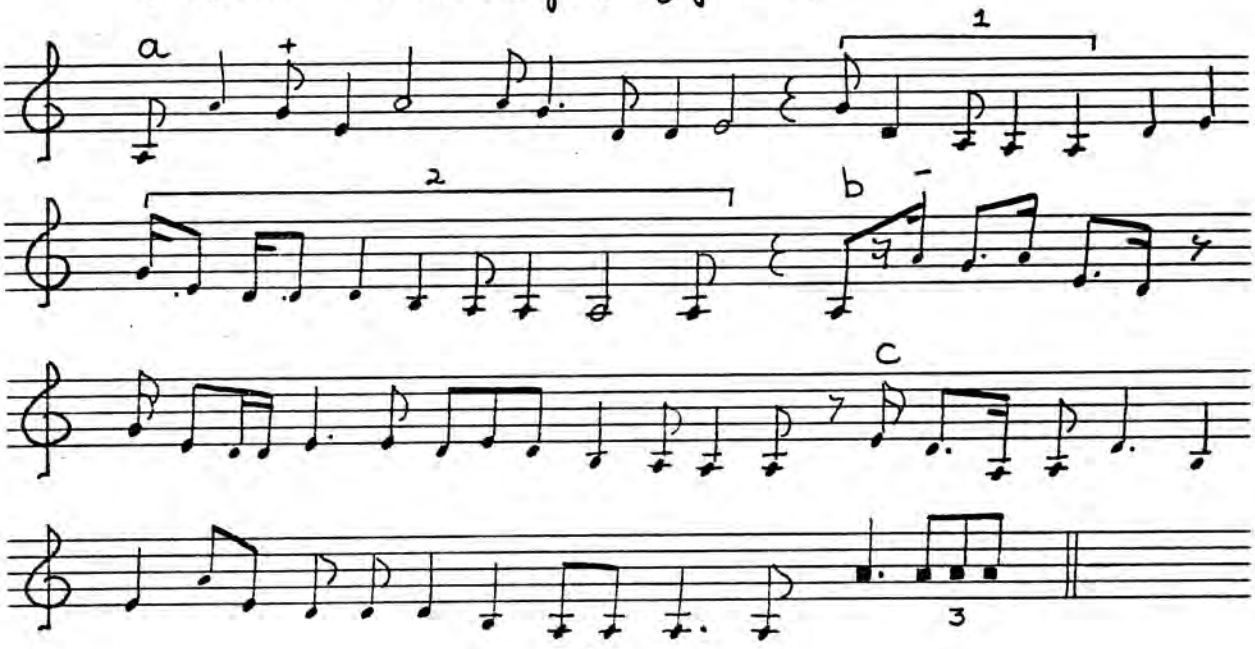
♩= 74 Fl. 8. Winnebago-(Herzog 414.25)



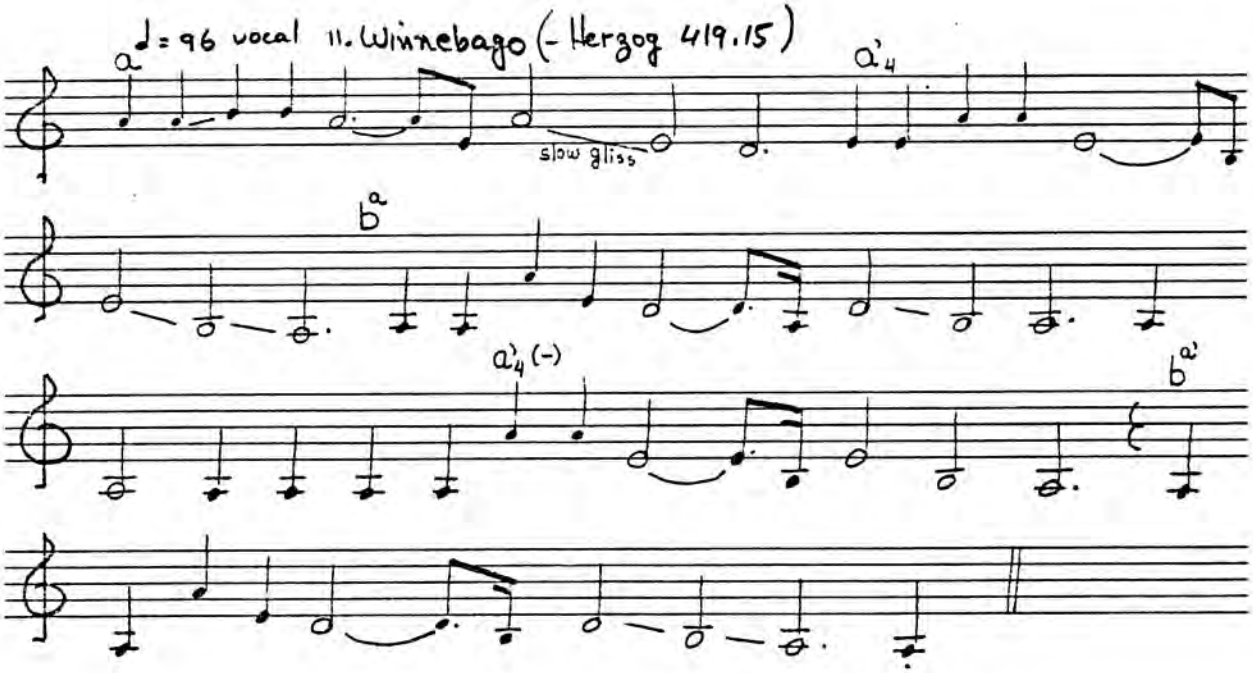
♩=84 Fl. 9. Winnebago(Herzog 419.1)

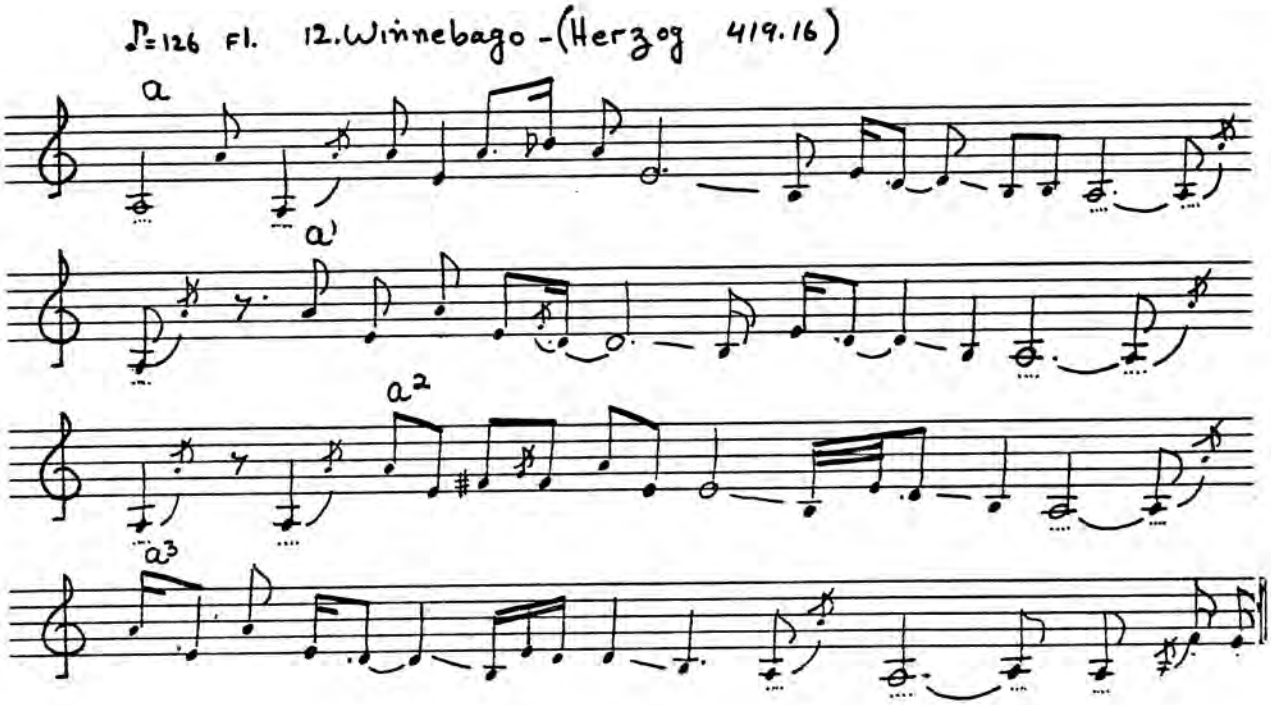


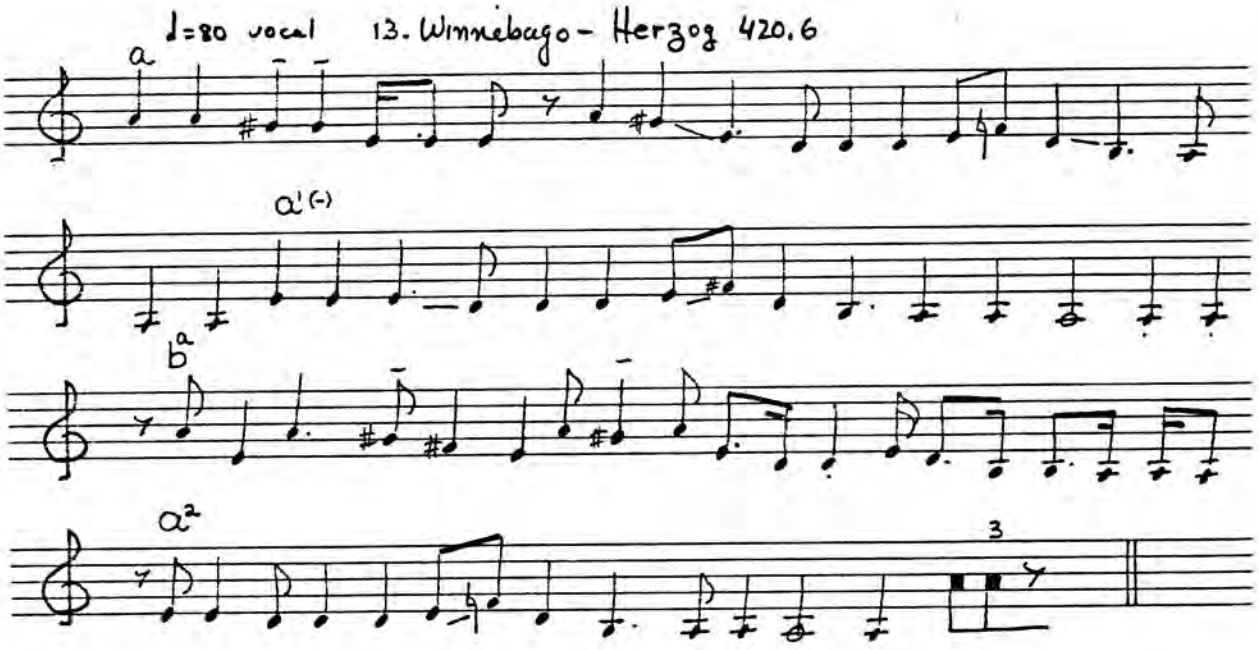
♩=74 vocal 10. Winnebago-(Herzog 419.2)

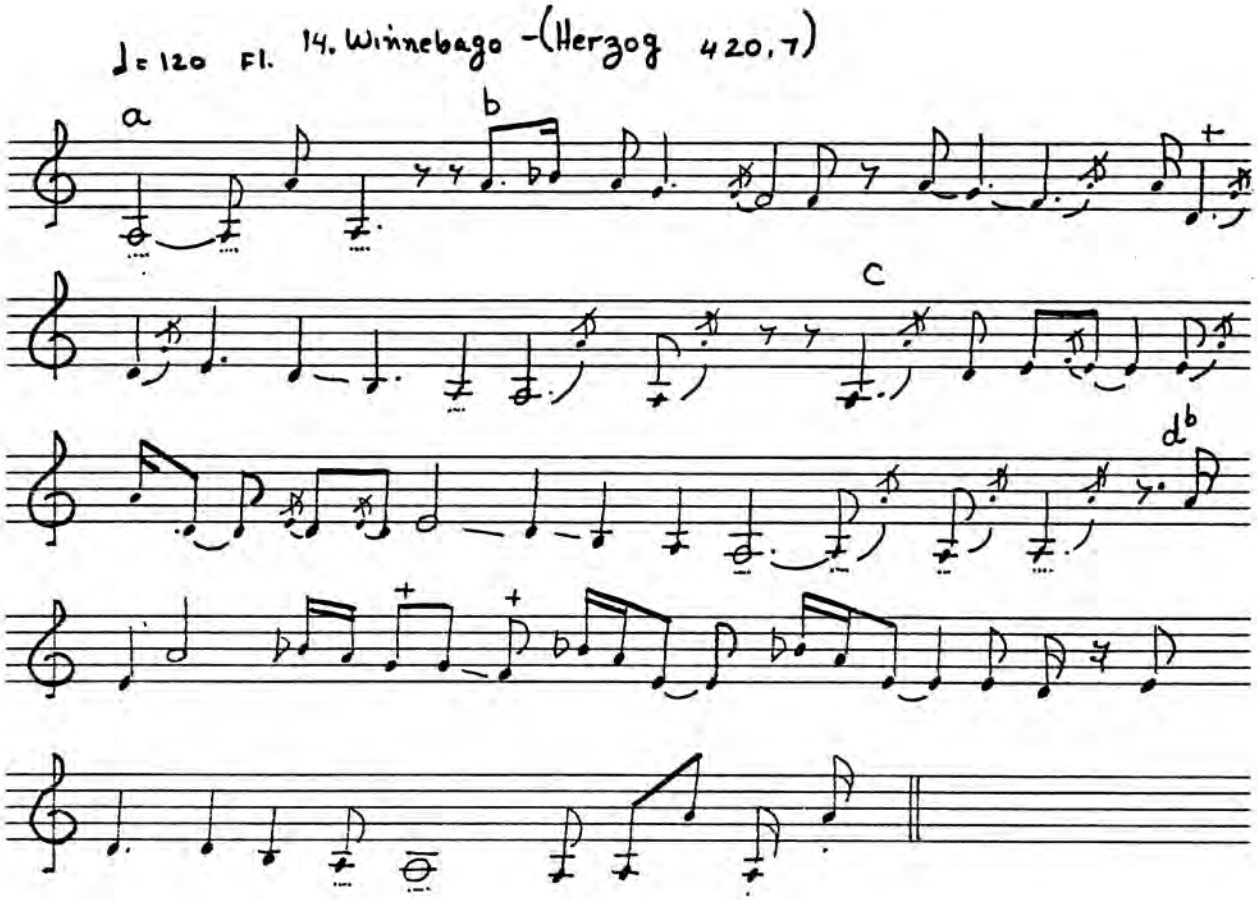


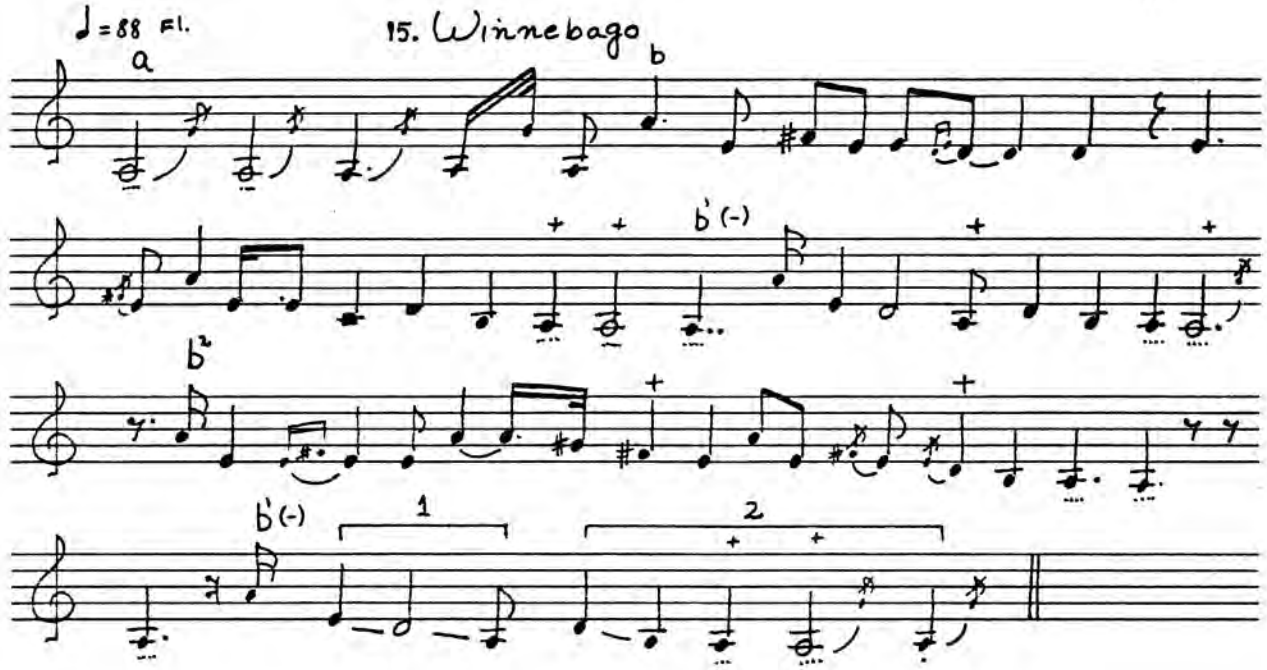
♩=96 vocal 11. Winnebago (- Herzog 419.15)

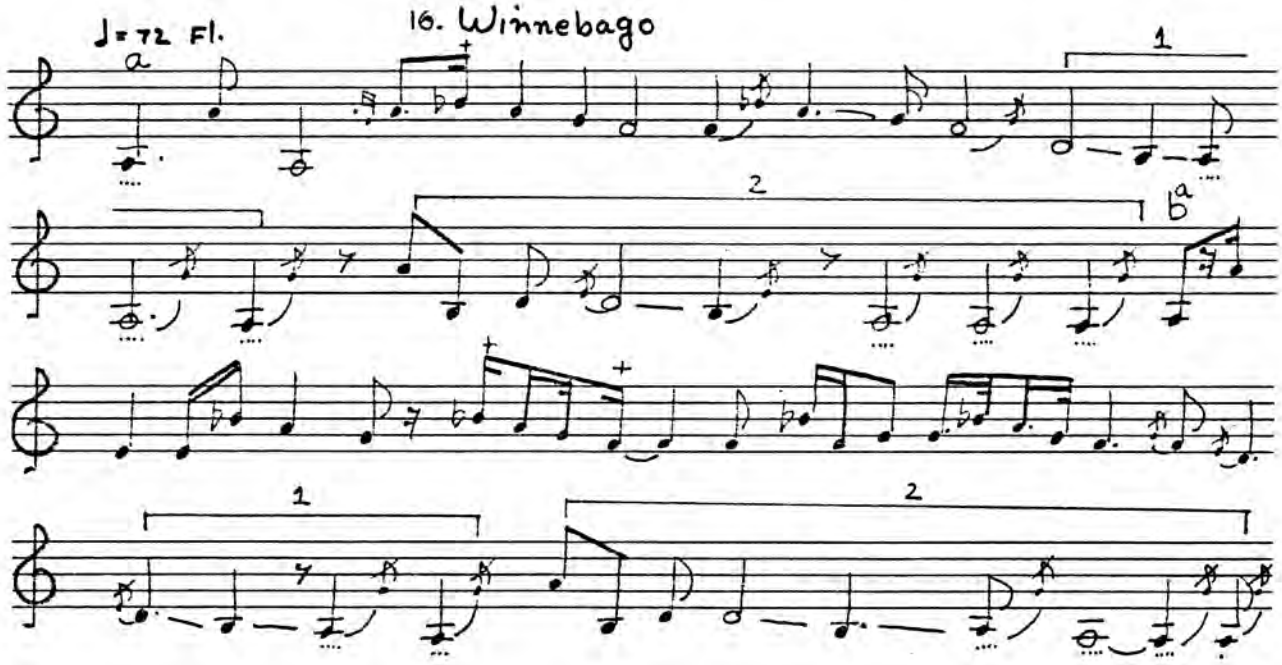


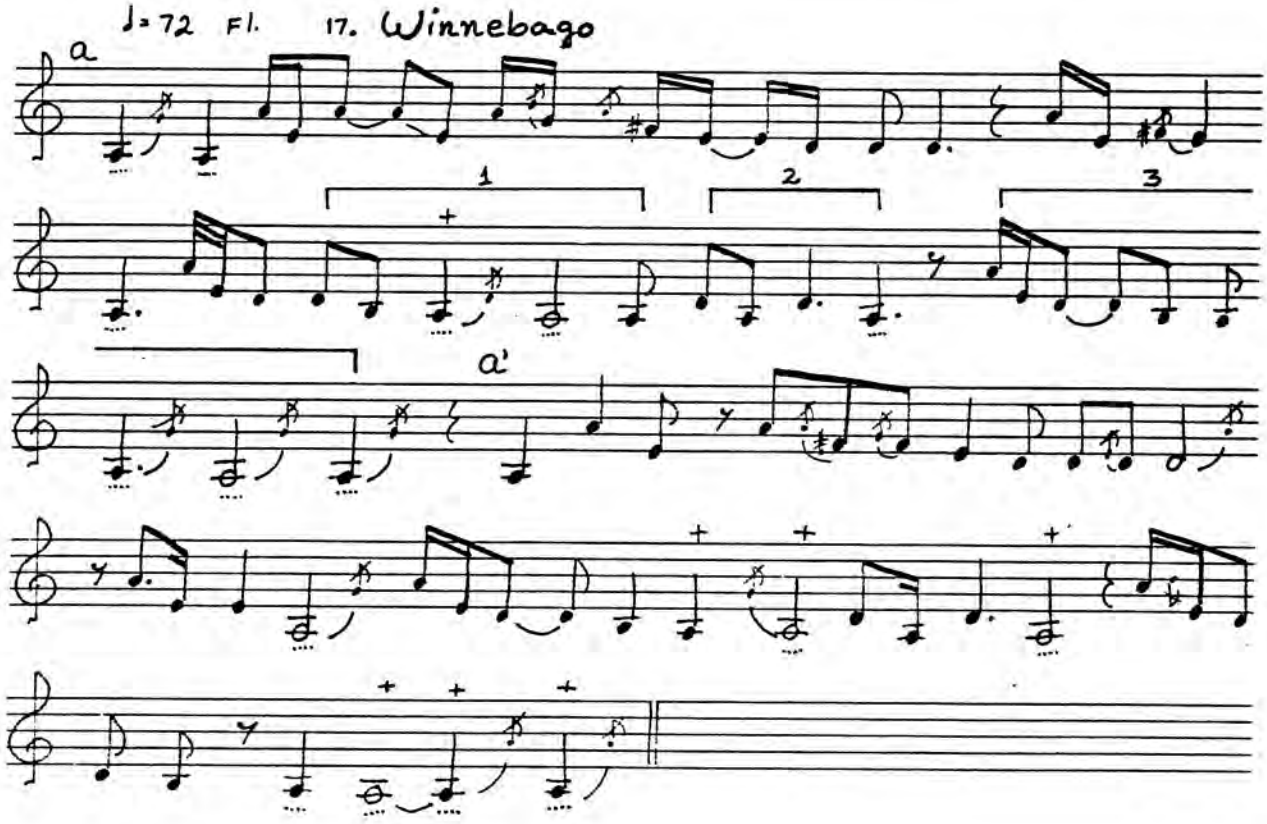

♪=126 Fl. 12. Winnebago - (Herzog 419.16)
a
a'
a2
a3


♩=80 vocal 13. Winnebago - Herzog 420.6
a
a'(-)
ba
a2
3

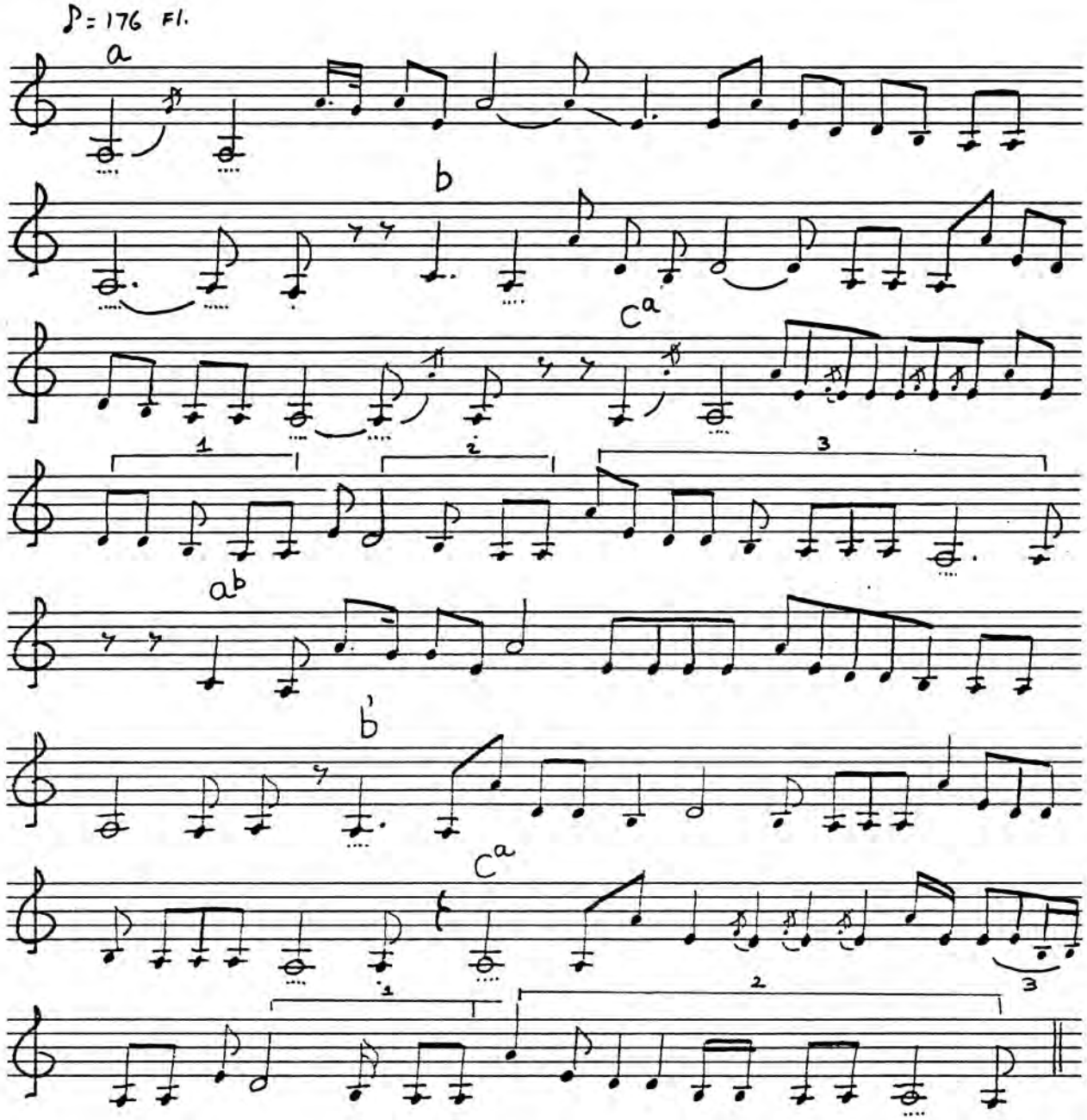

♩= 120 Fl. 14. Winnebago -(Herzog 420,7)
a
b
c
d♭


♩=88 Fl.
15. Winnebago
a
b
b'(-)
b²
b'(-)
1
2

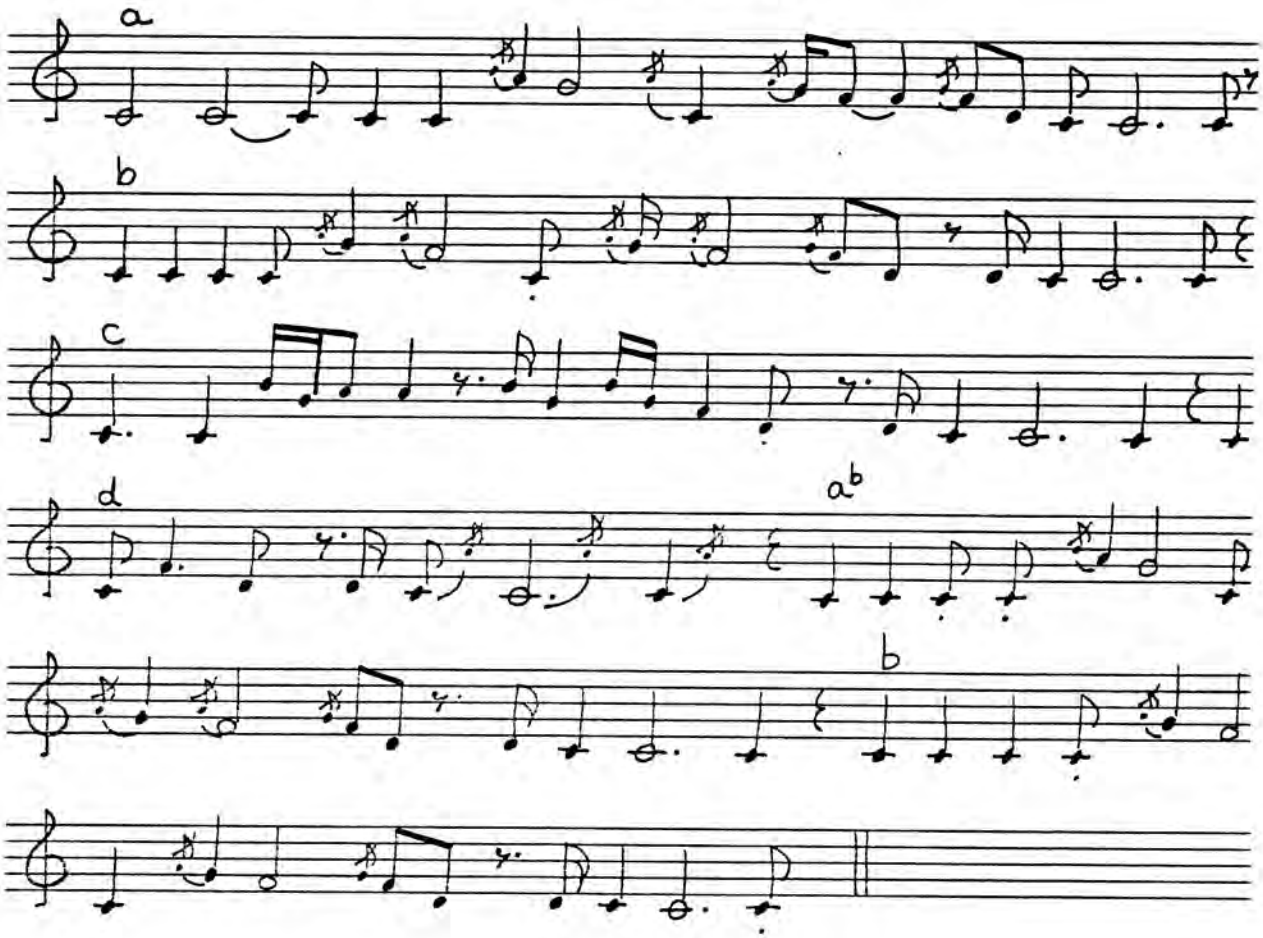

♩=72 Fl.
16. Winnebago
a
1
2
b
1
2

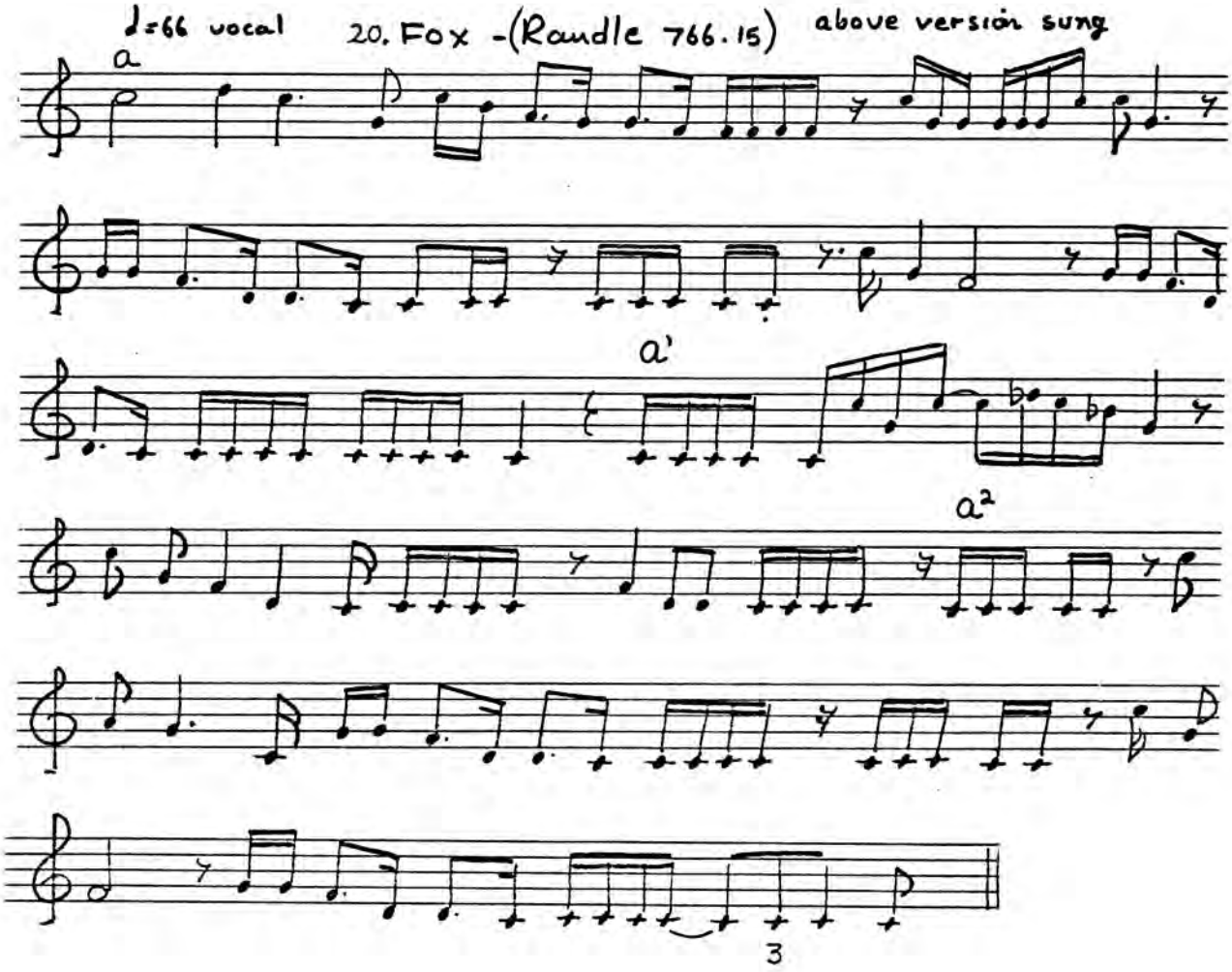

♩= 72 Fl. 17. Winnebago
a
1
2
3
a'

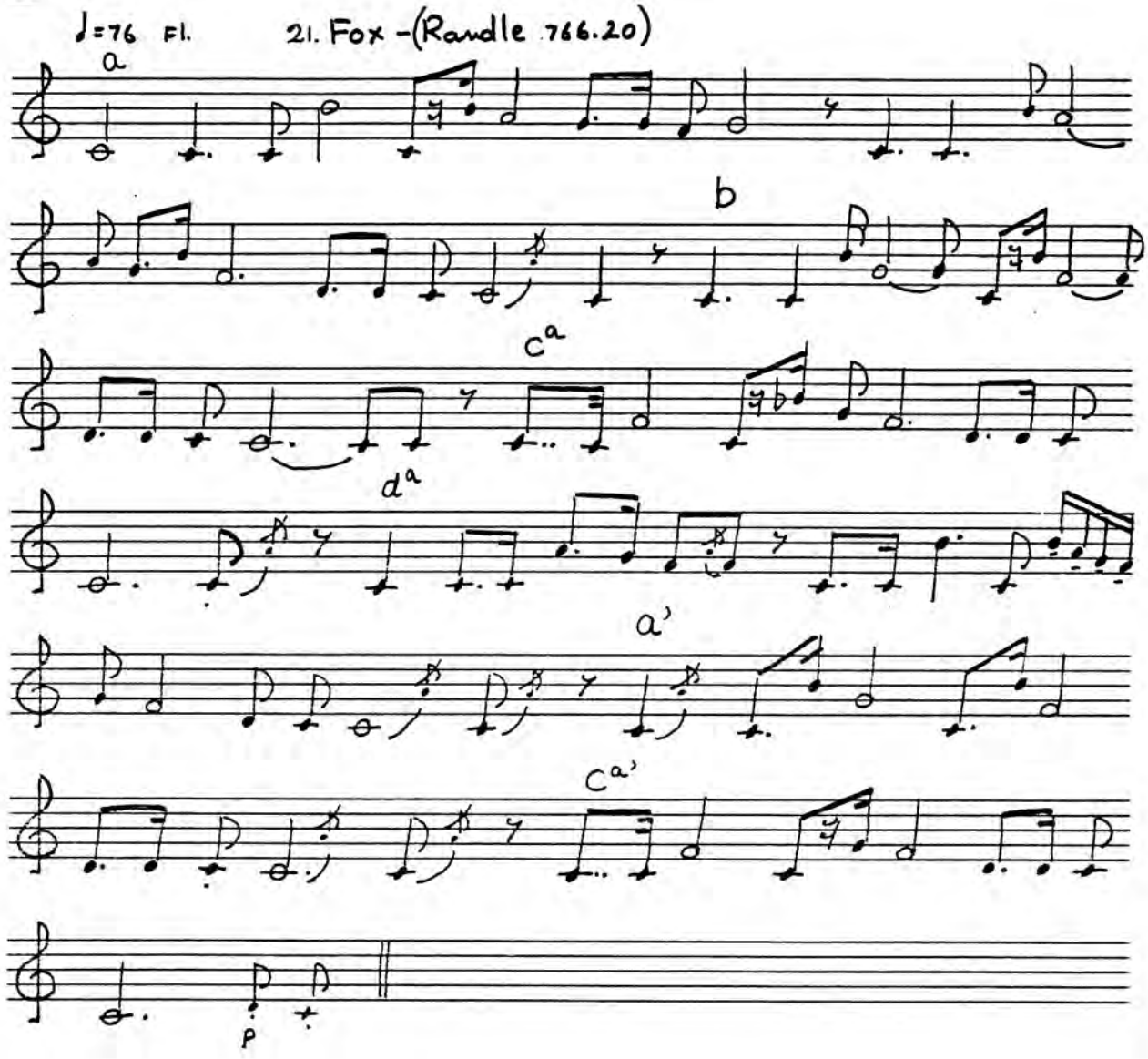
18. Meskwaki

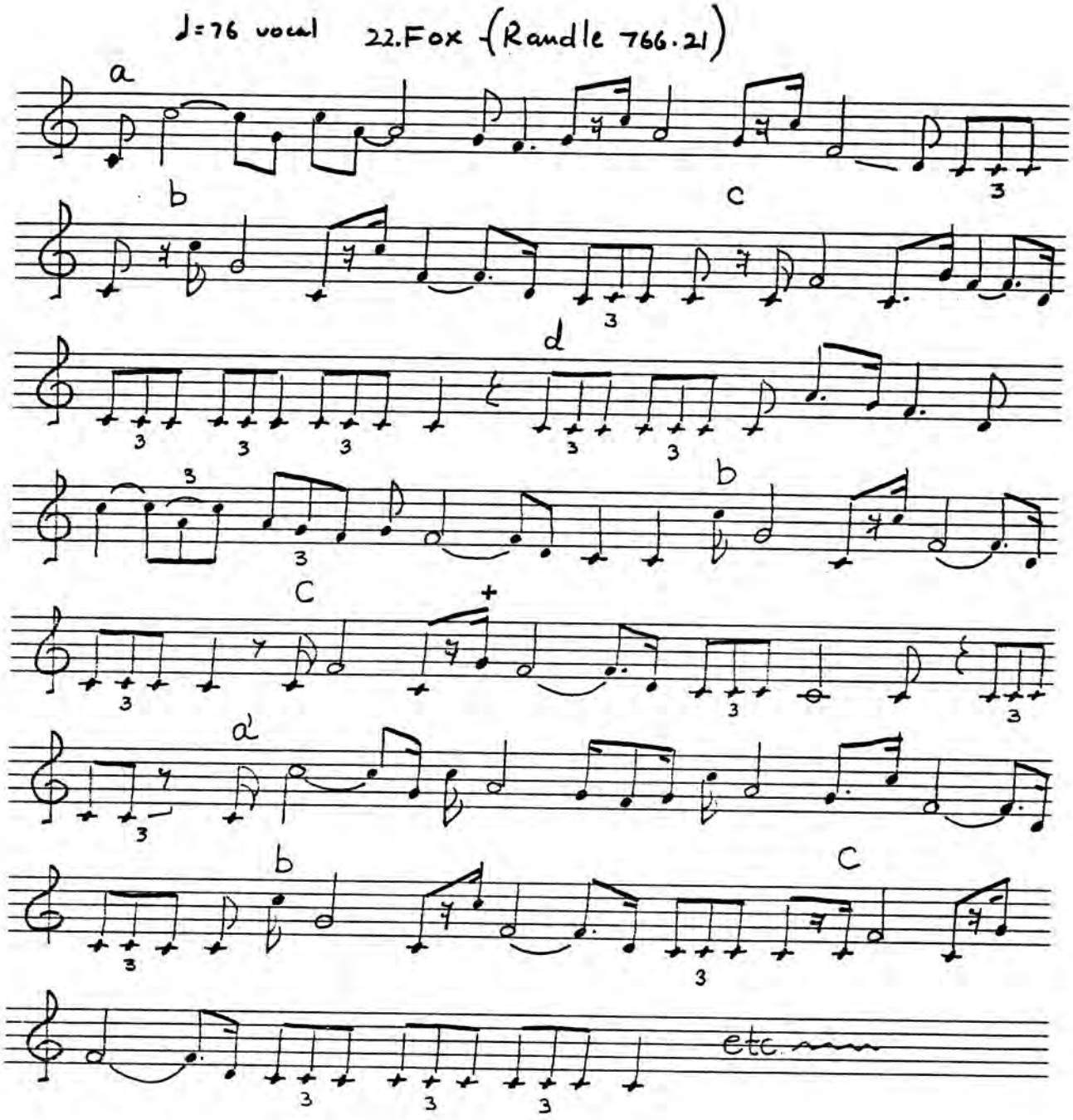


♩=68 Fl. 19. Fox -(Randle 766.13)



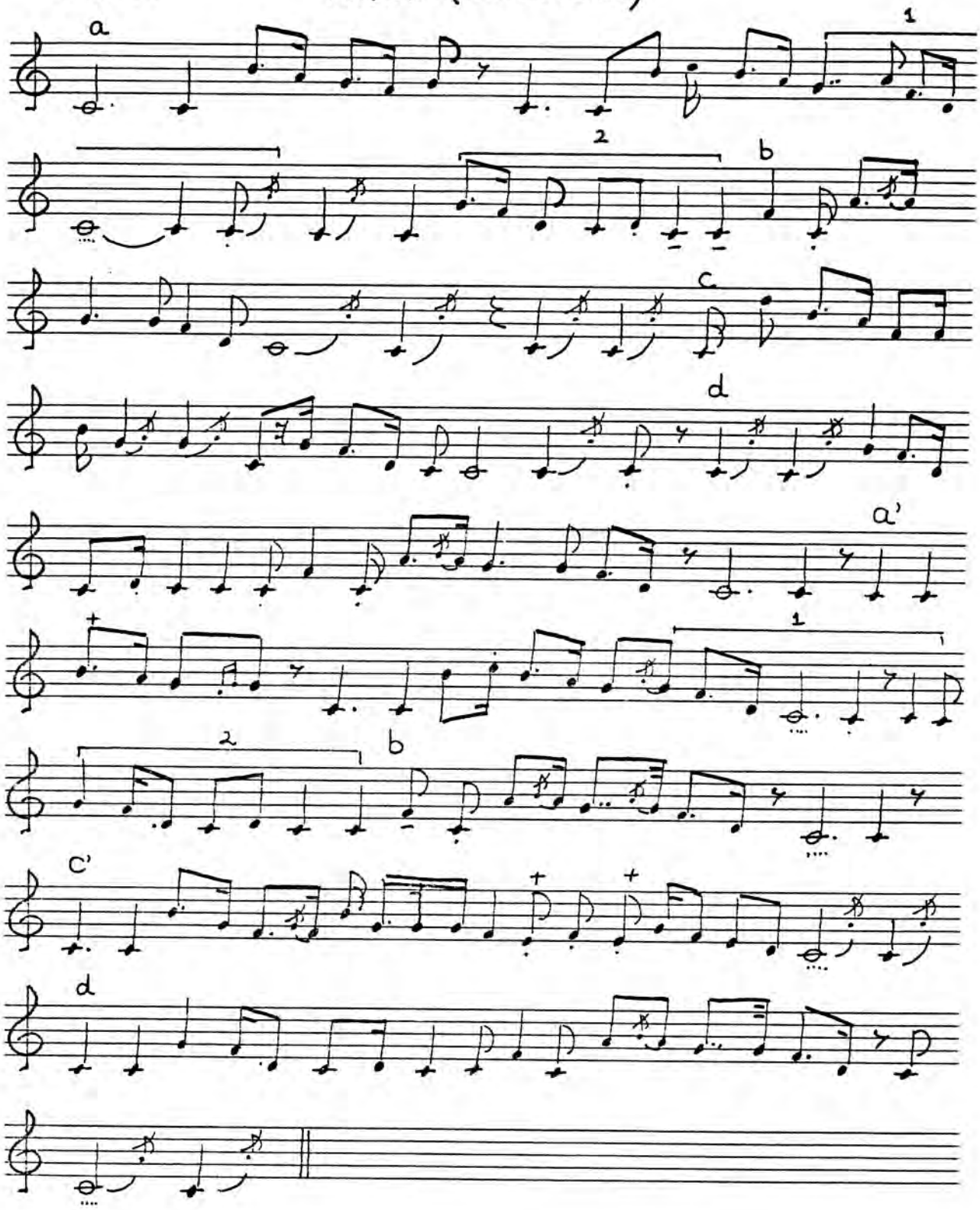

♩=66 vocal
20. Fox -(Roundle 766.15) above version sung
a
a'
a²
3

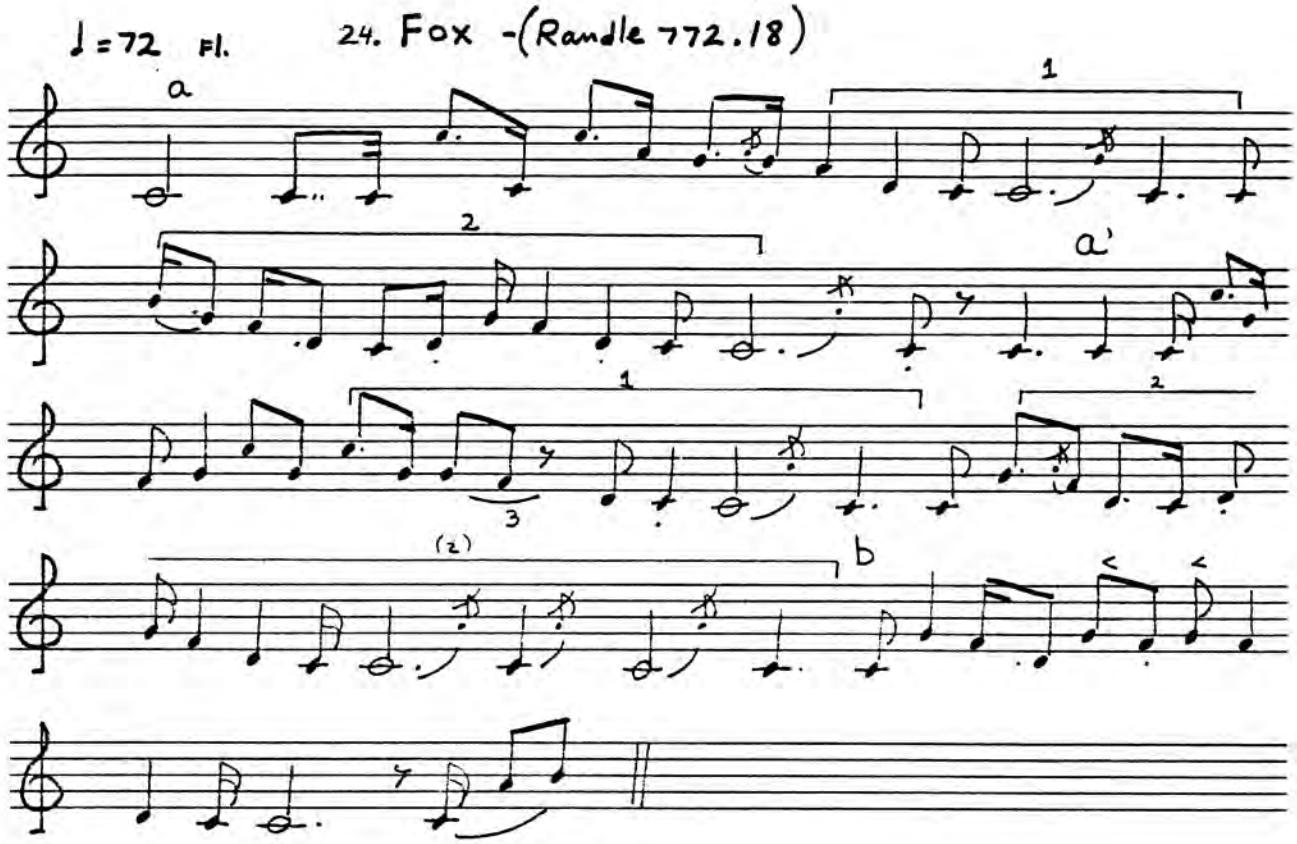

♩=76 Fl.
21. Fox -(Randle 766.20)
a
b
c^a
d^a
a'
c^a'
p

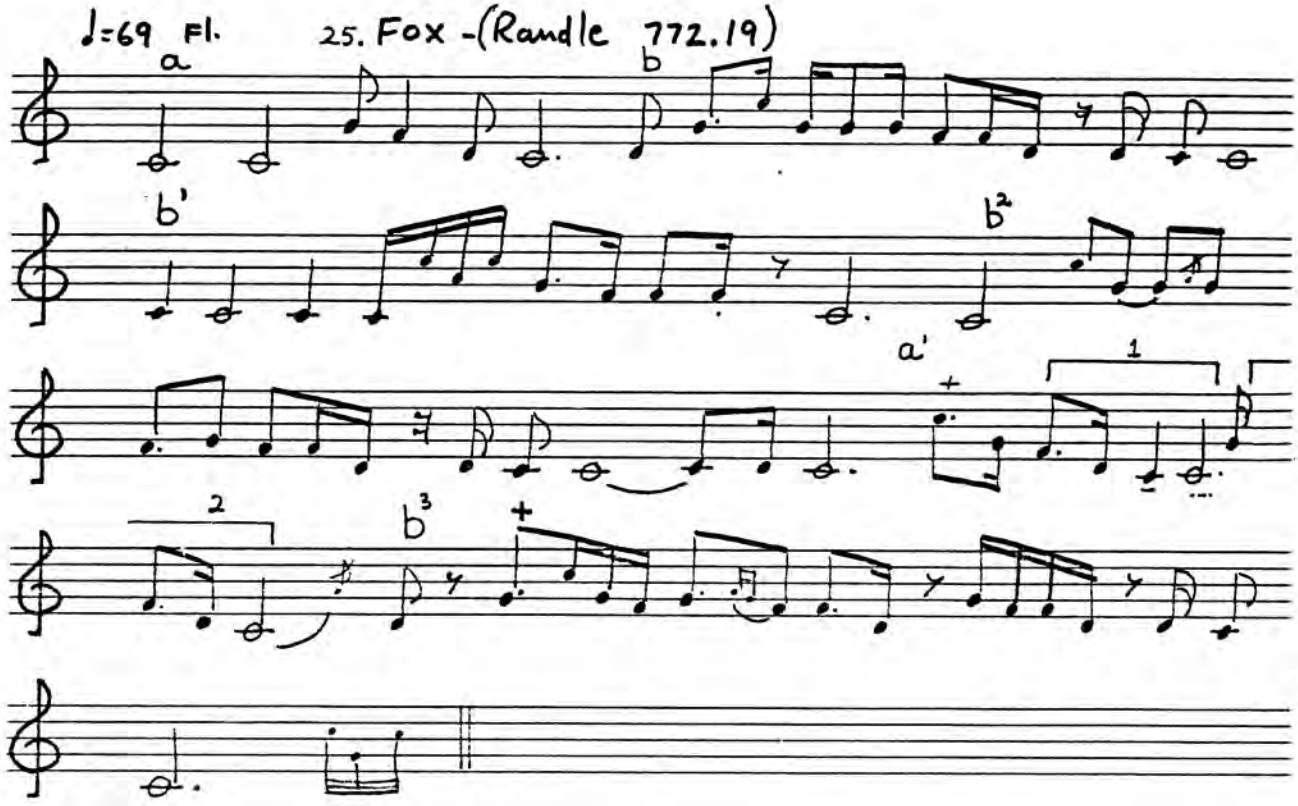

♩=76 vocal
22. Fox (Randle 766.21)
a
b
c
d
b
C
a'
b
C
etc.

♩=76 Fl.

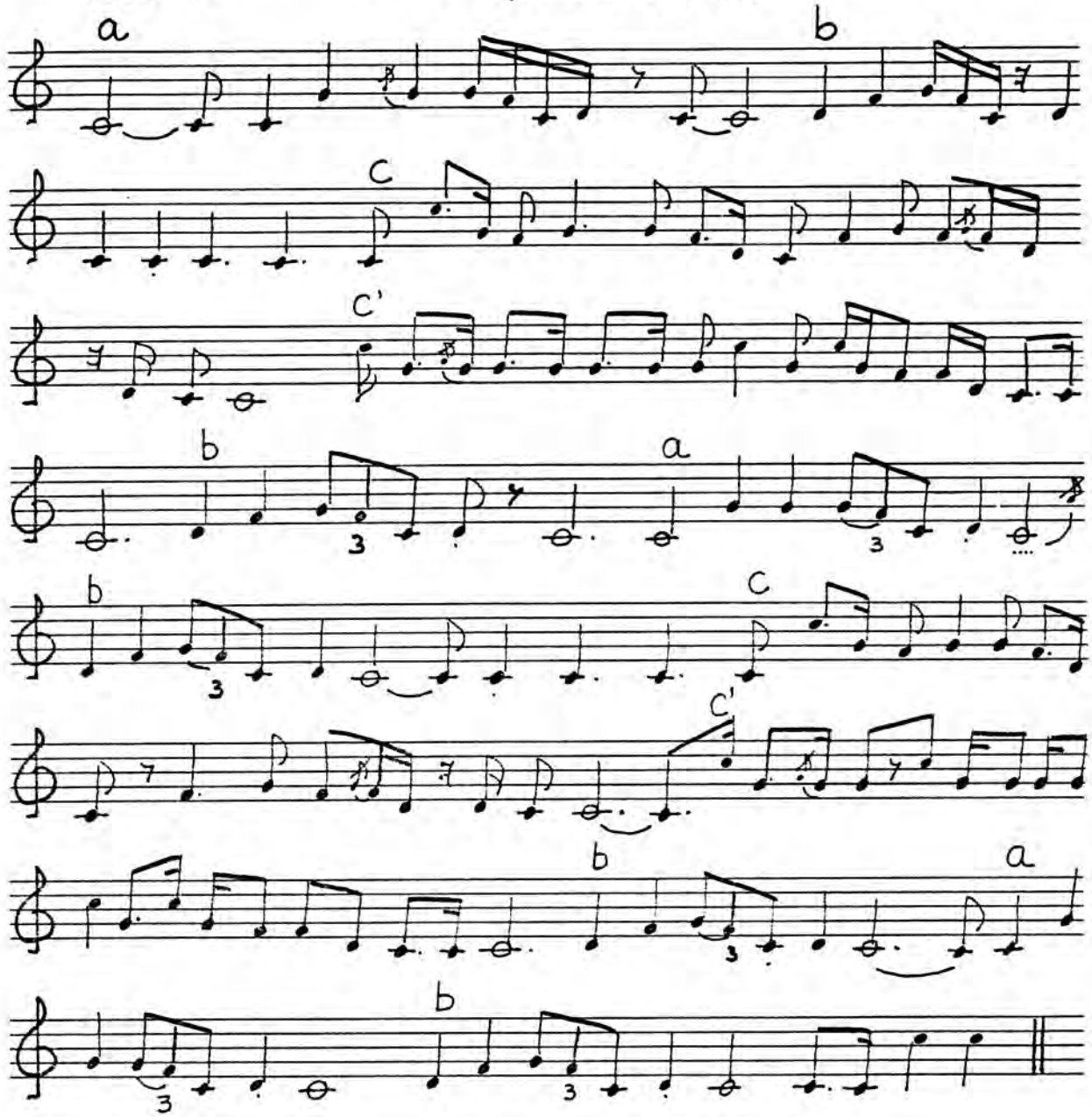
23. FOX – (Randle 766.23)



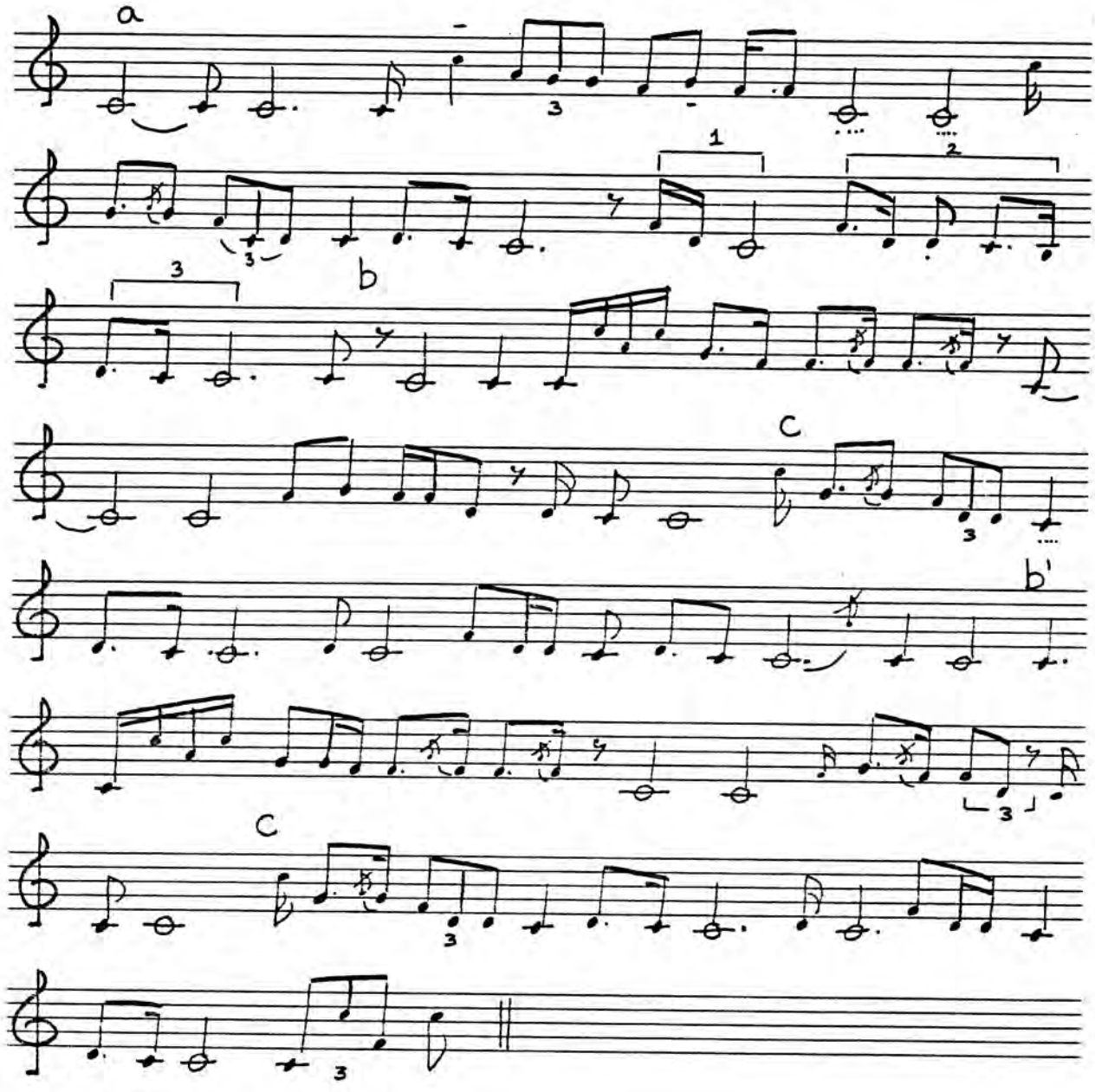

♩=72 Fl.
24. Fox -(Randle 772.18)
a
1
2
a'
1
2
3
(2)
b


♩=69 Fl.
25. Fox -(Randle 772.19)
a
b
b'
b²
a'
1
2
b³

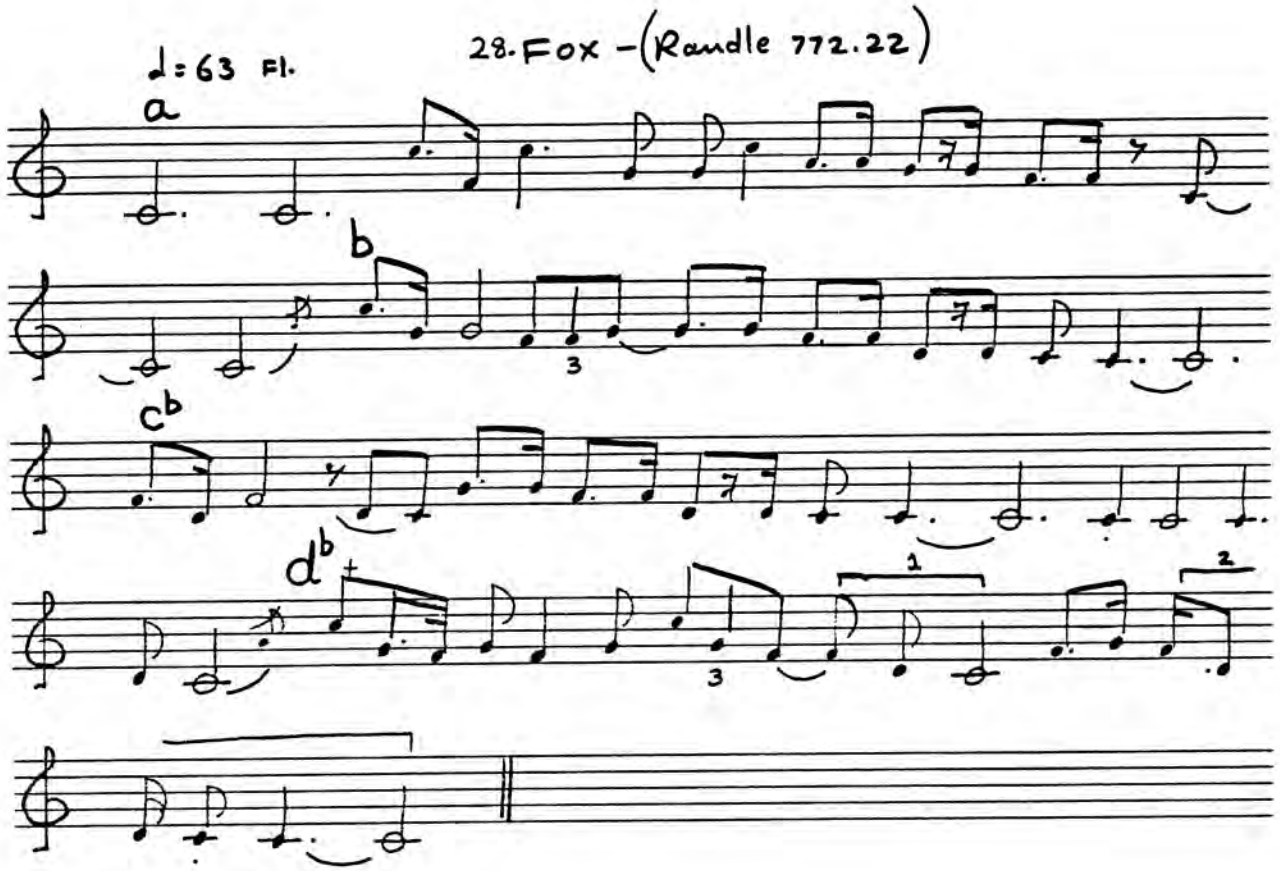
26. Fox -(Randle 772.20)

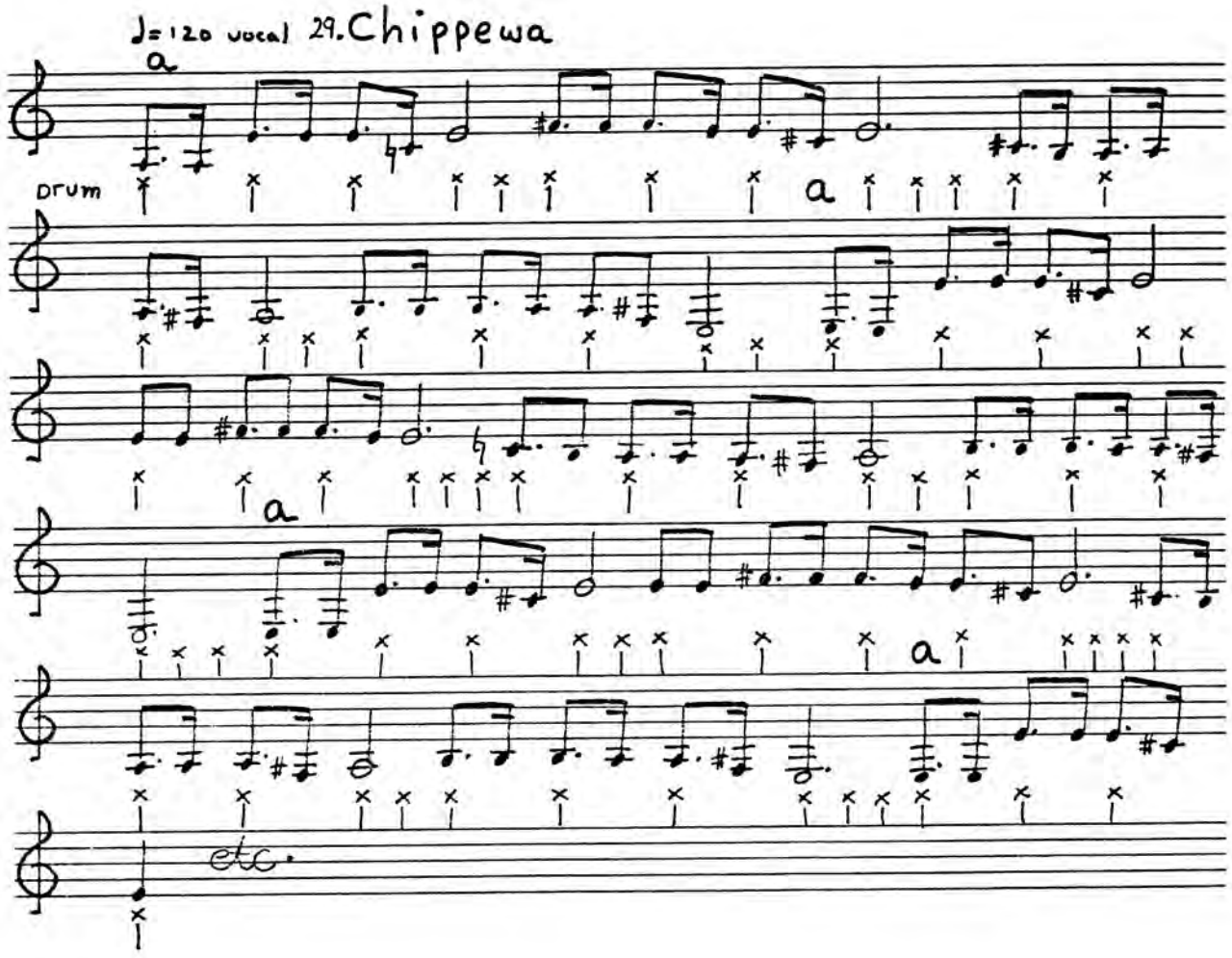


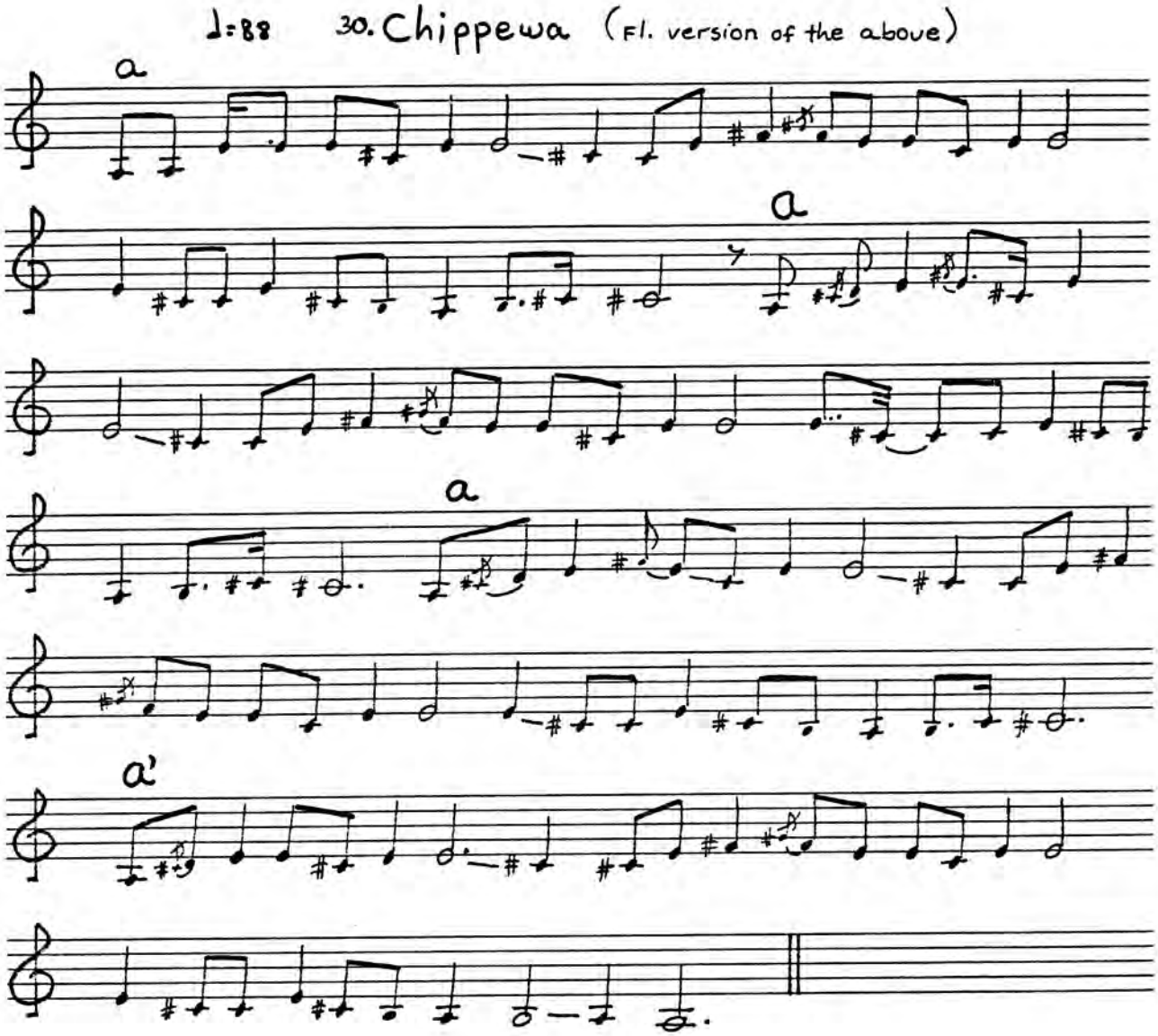
♩=63 Fl. 27. Fox - (Randle 772.2J)



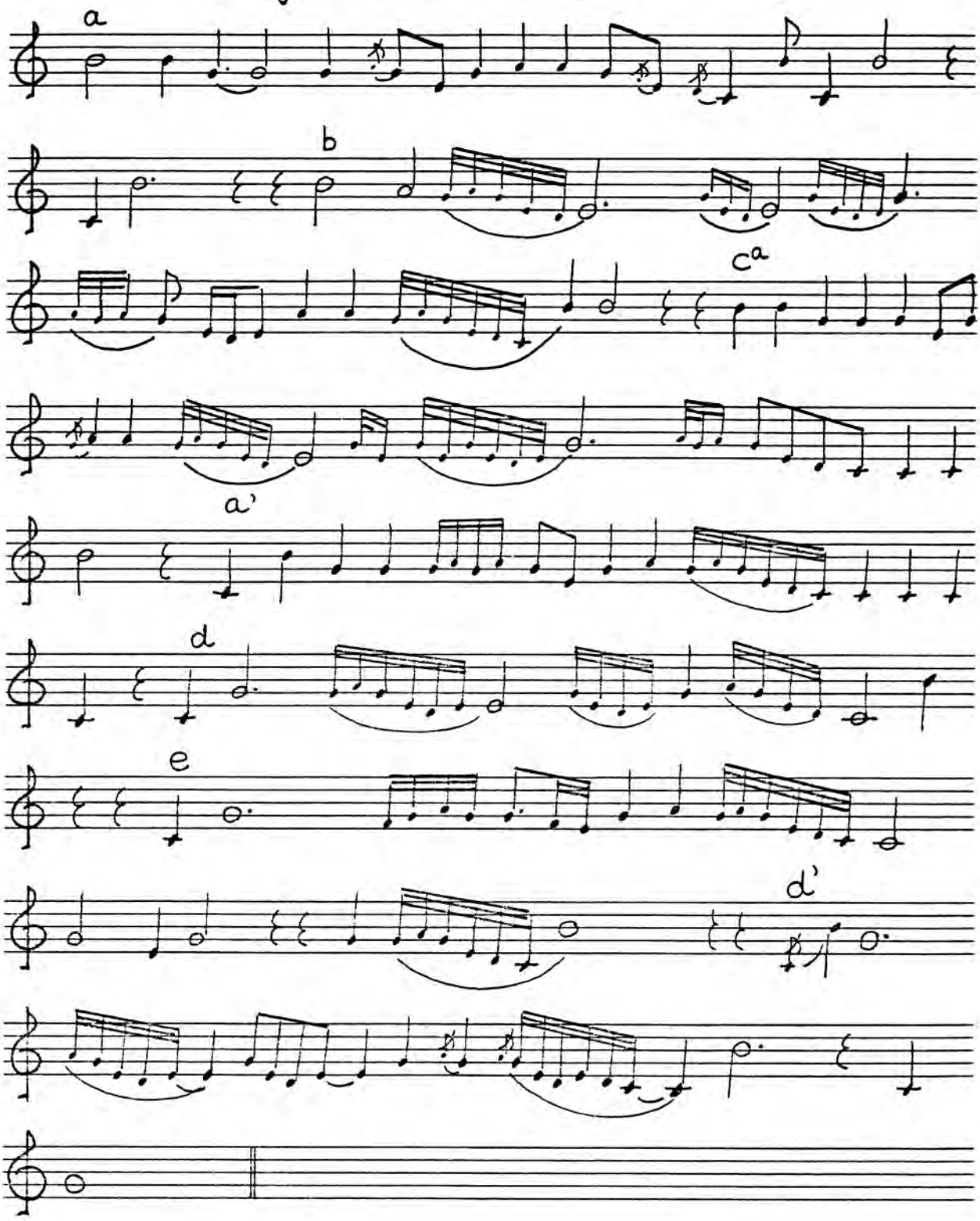
28. Fox – (Randle 772.22)

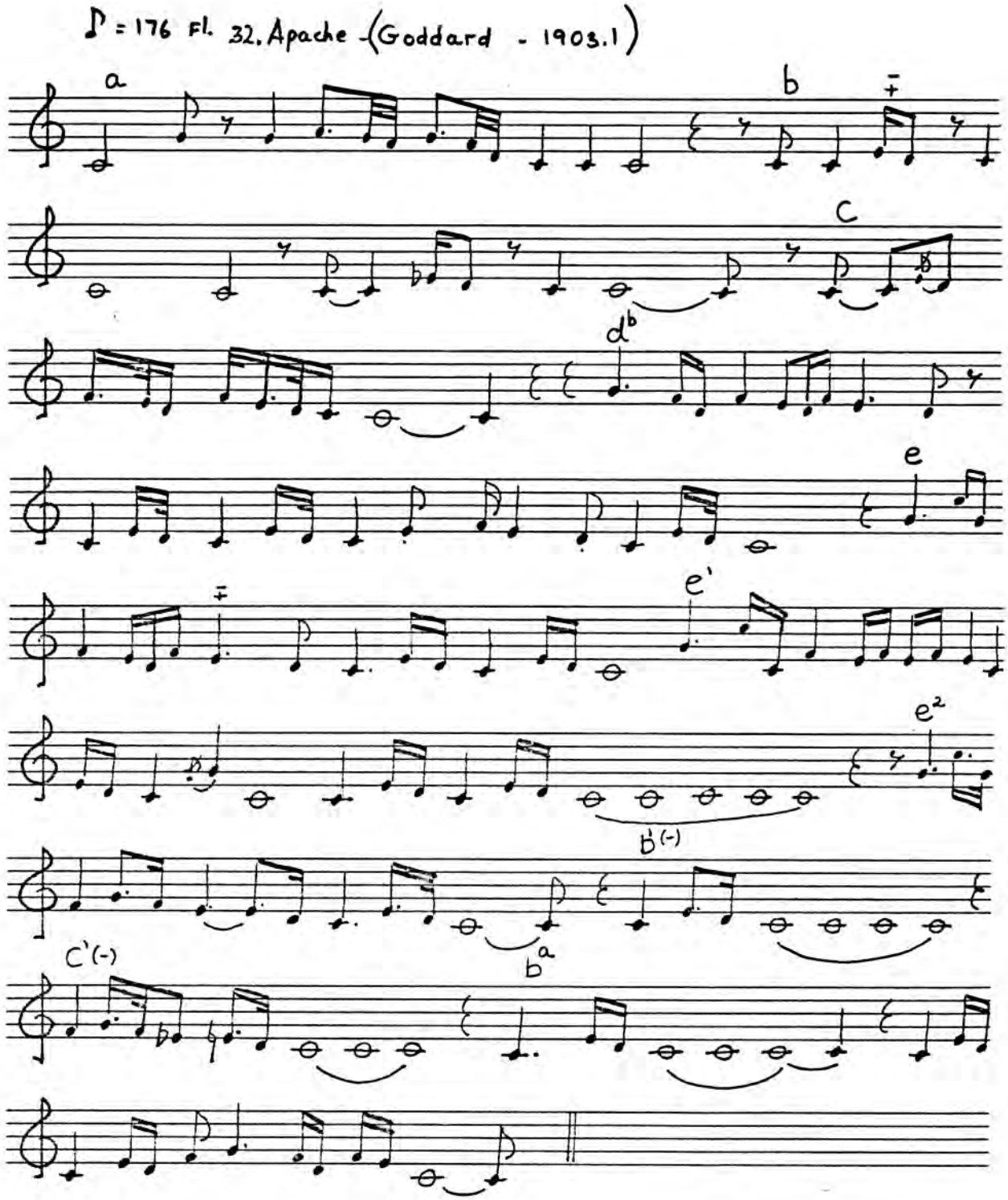


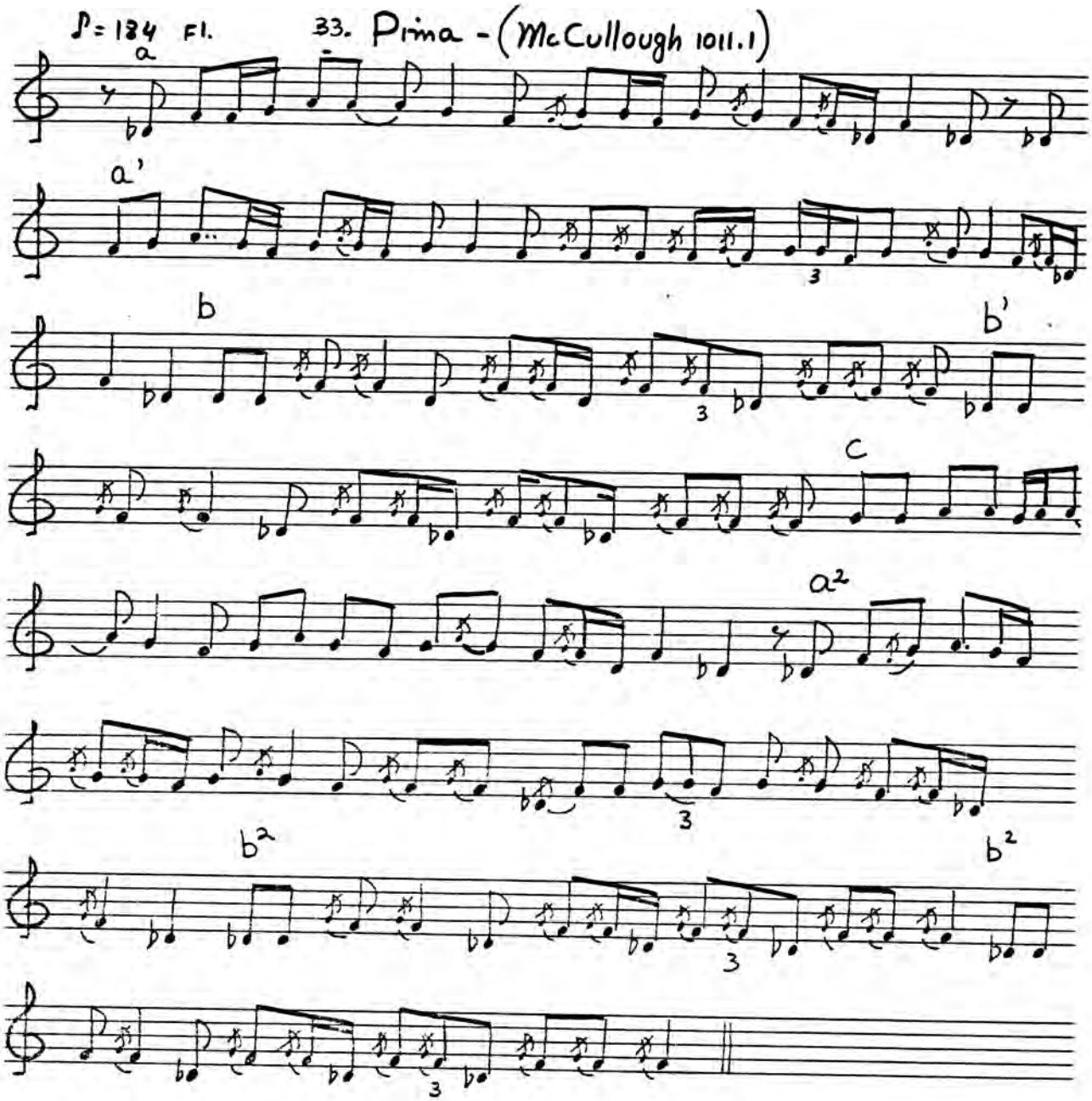

♩=120 vocal 29. Chippewa
a
drum
a
a
a
etc.

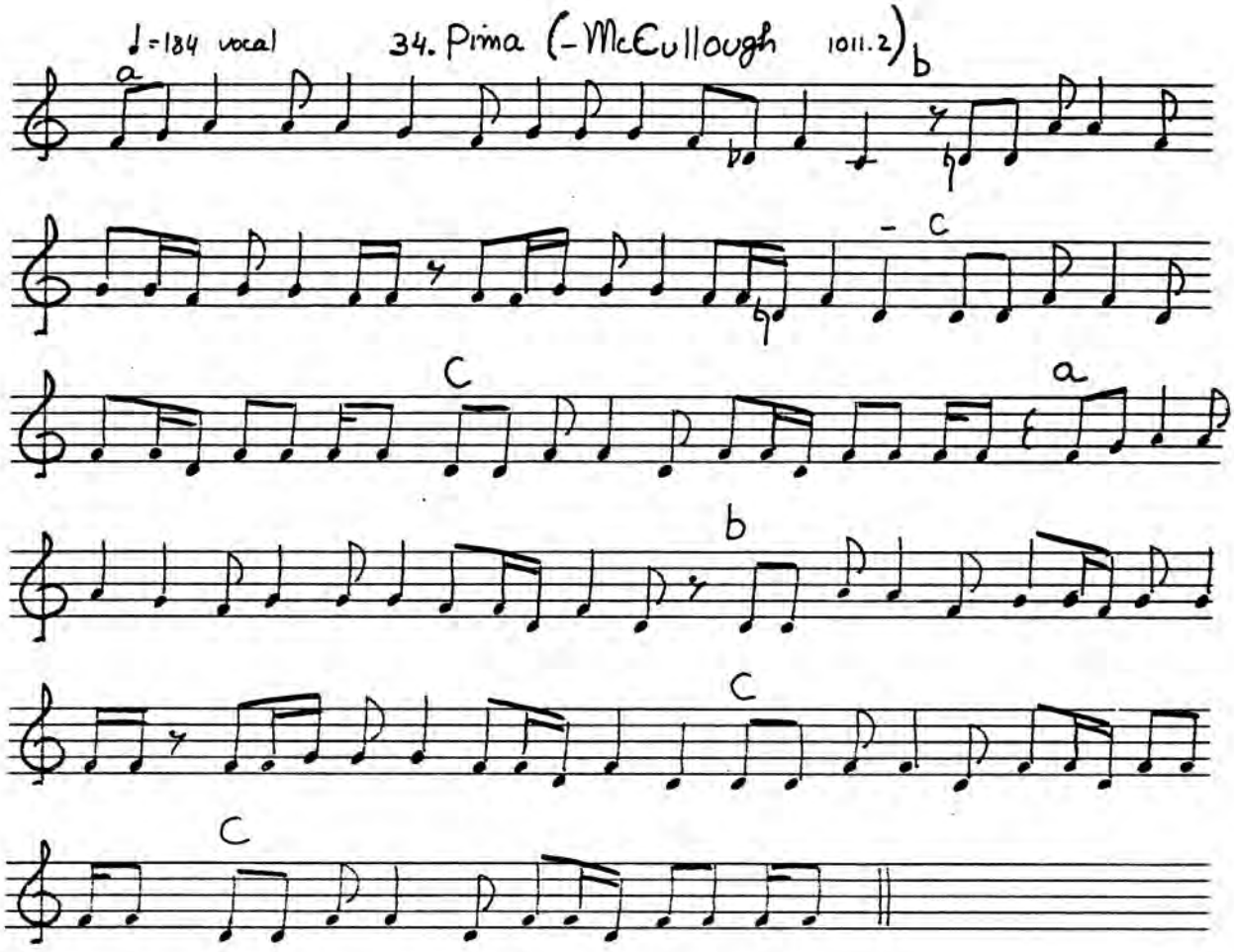

♩=88 30. Chippewa (Fl. version of the above)
a
a
a
a'

♩=112 Fl 31. Yuchi -(Speck 1946.2)

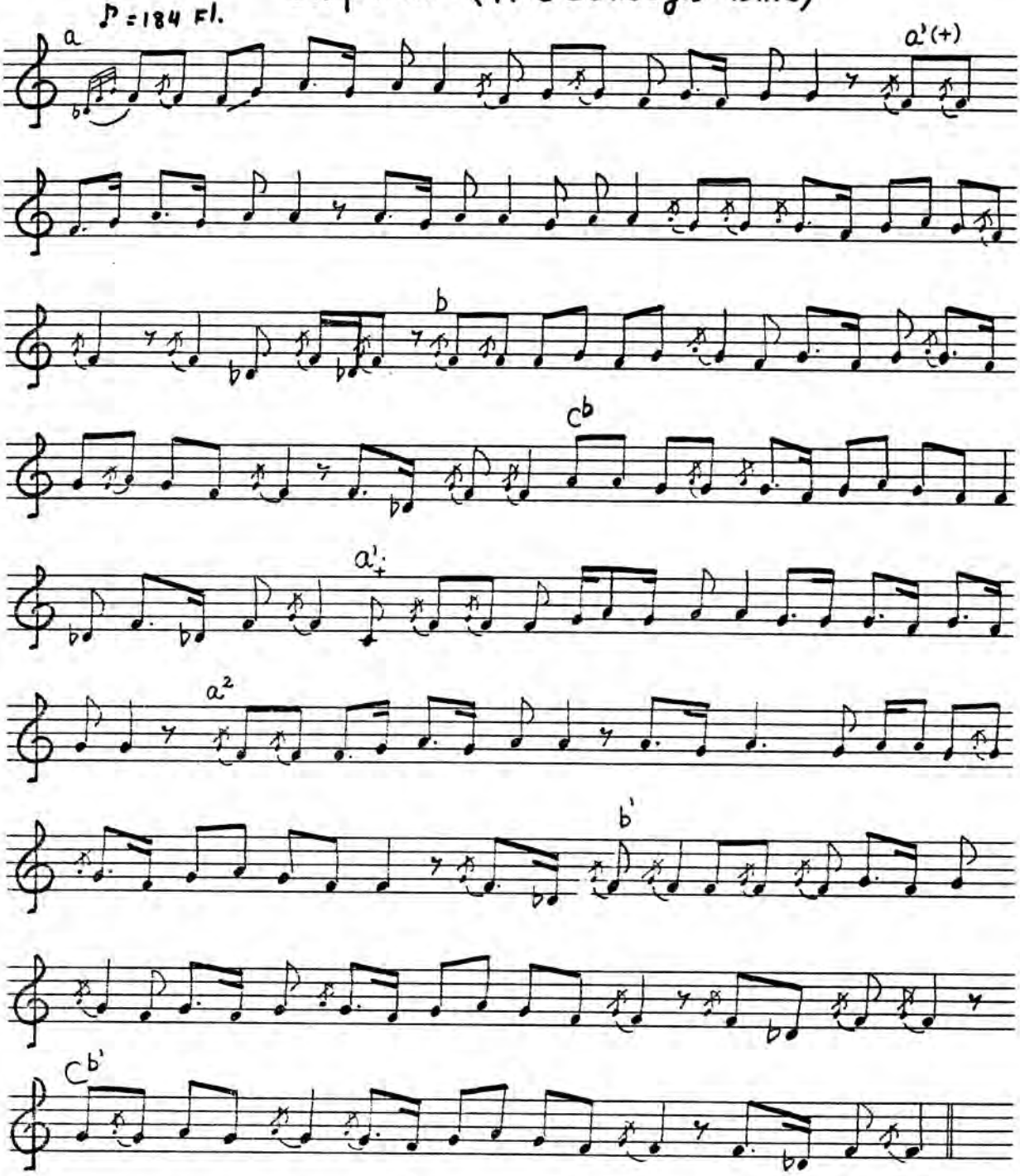



♪ = 176 Fl. 32. Apache (Goddard - 1903.1)
a
b
c
d♭
e
e'
e²
b'(-)
b^a
c'(-)

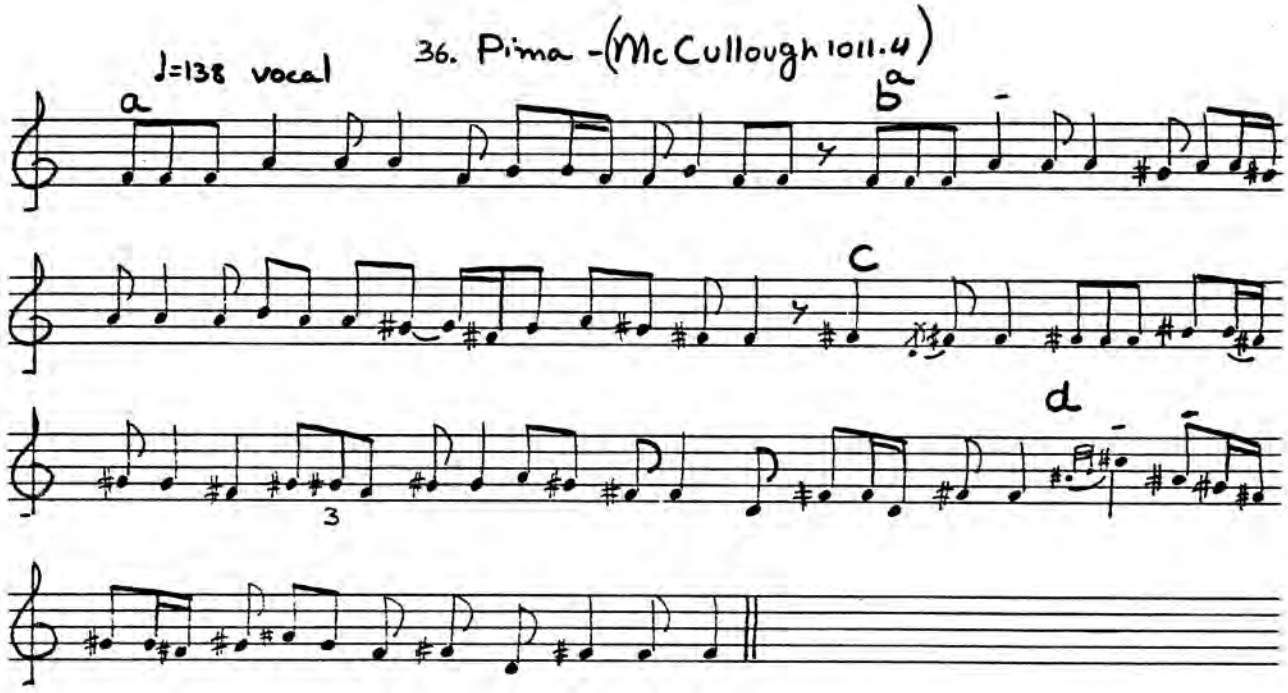

♩= 184 Fl.
33. Pima - (McCullough 1011.1)
a
a'
b
b'
c
a2
b2
b2

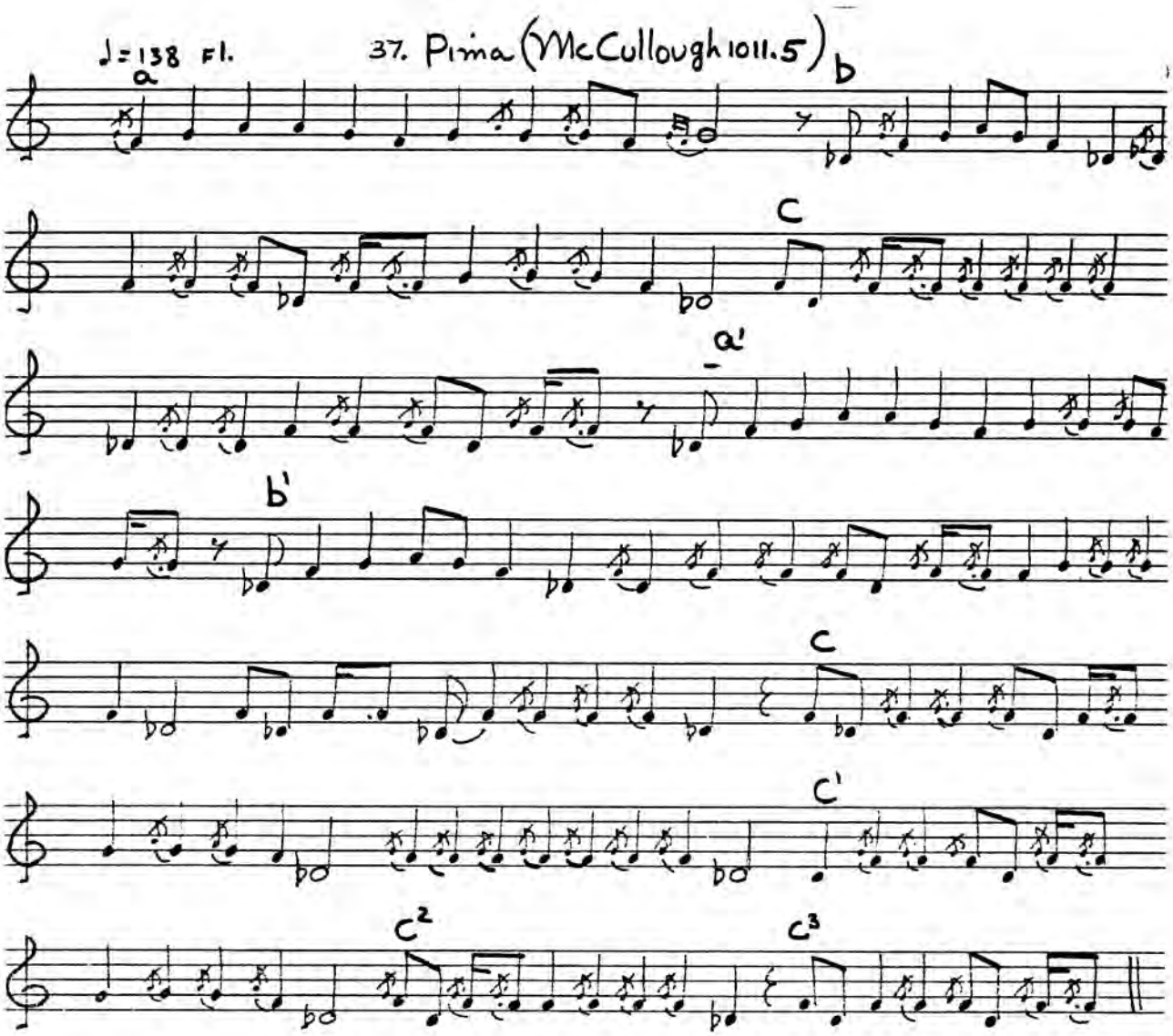

♩=184 vocal
34. Pima (-McCullough 1011.2)
a
b
- c
C
a
b
C
C

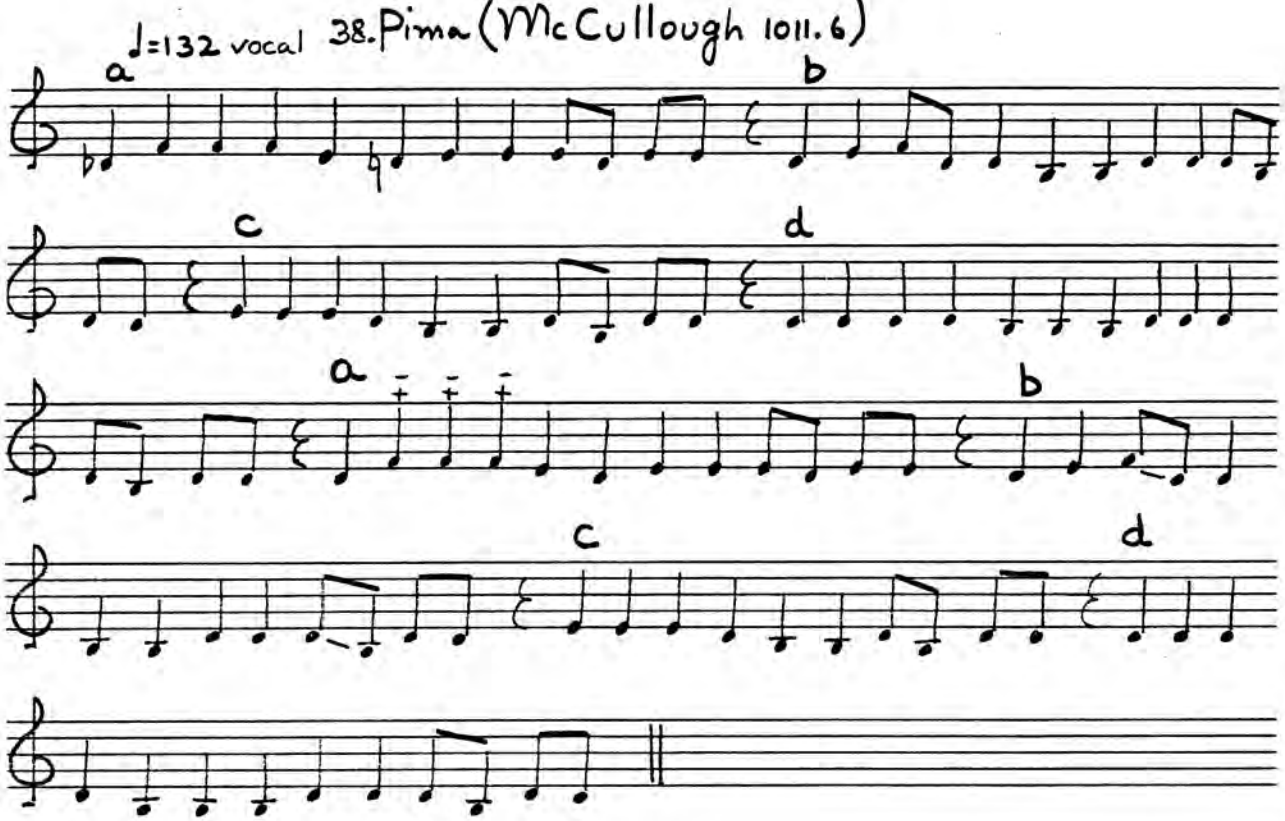
35. Pima - (McCullough 1011.3)

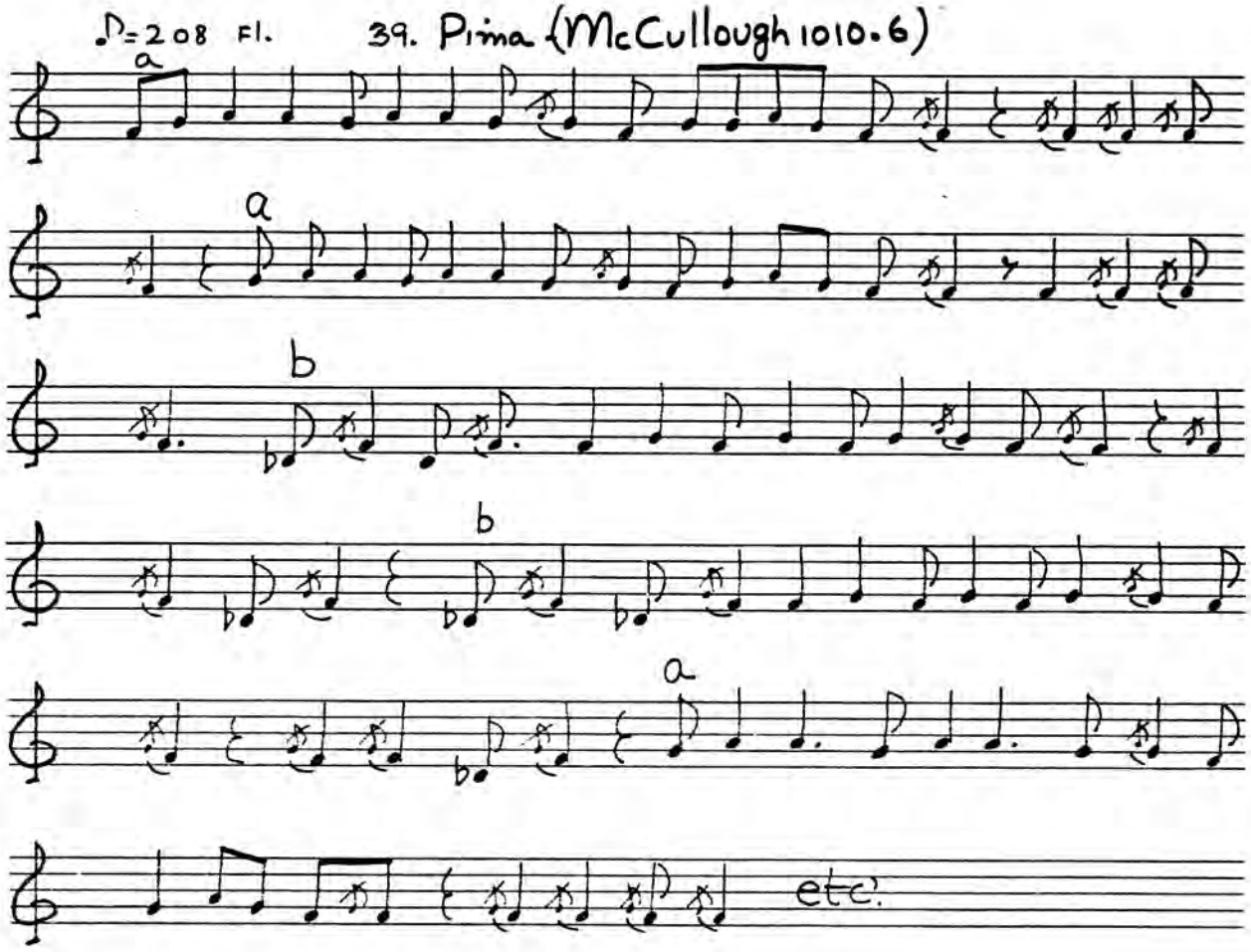


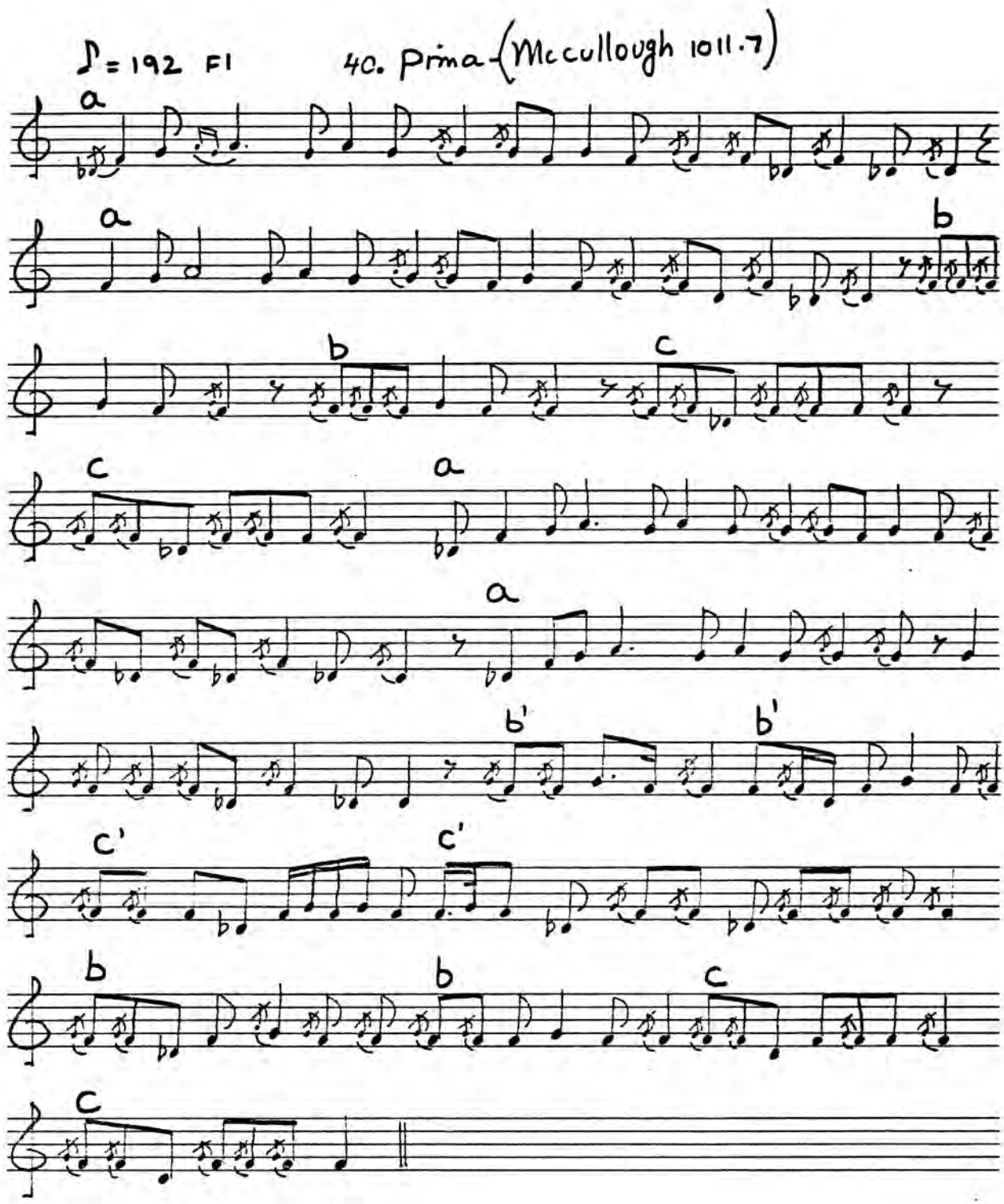
36. Pima -(McCullough 1011.4)

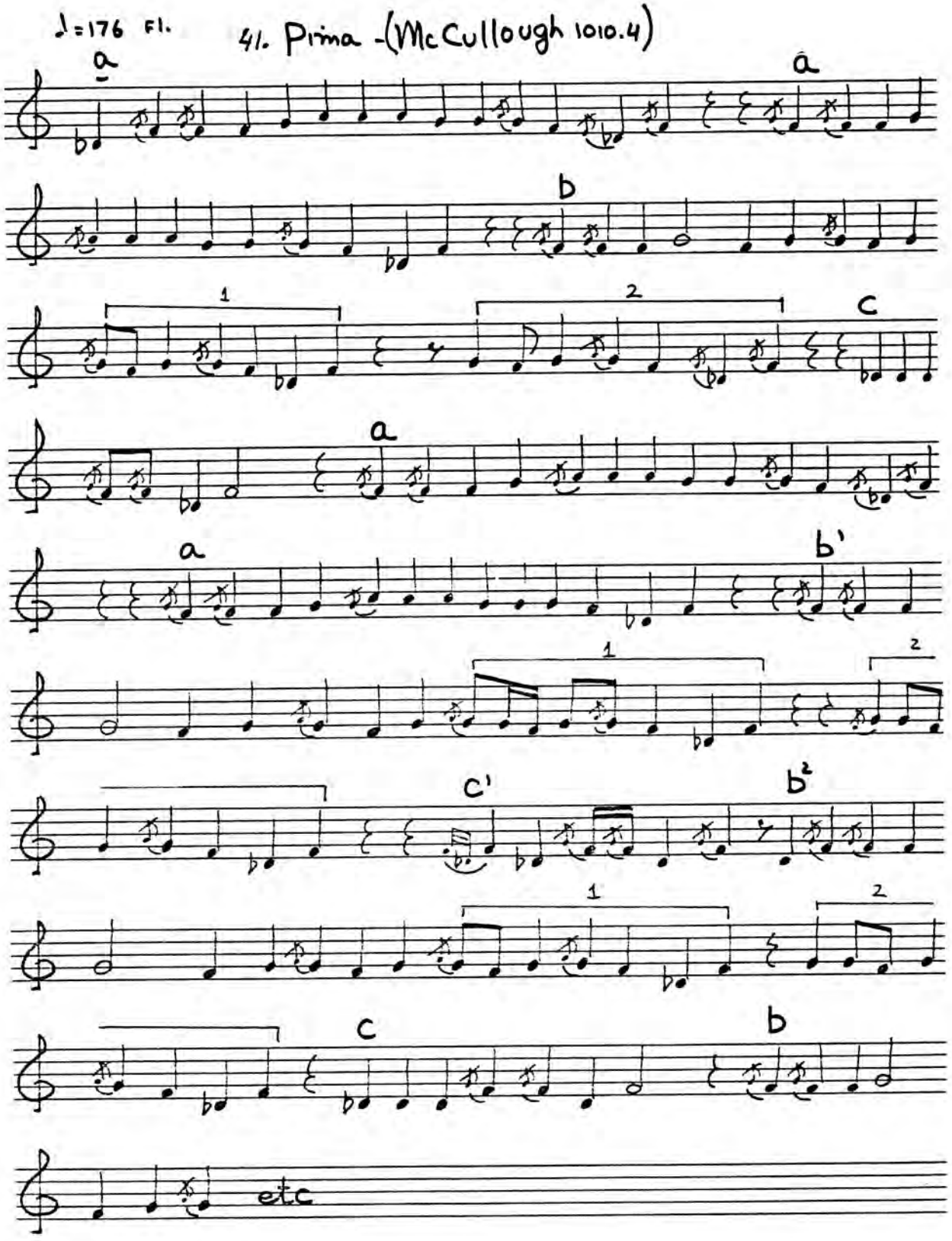


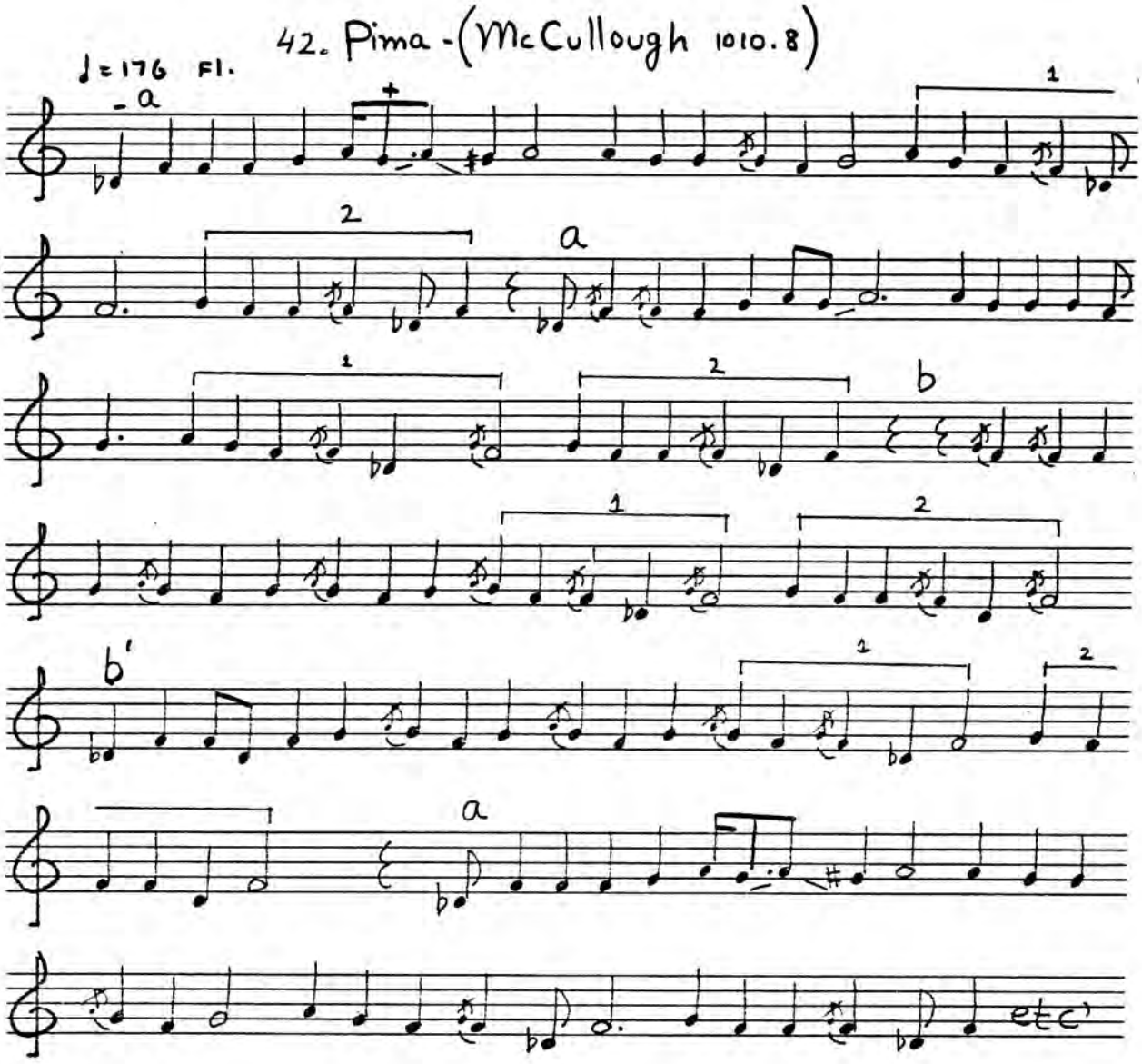

♩=138 Fl.
37. Pima (McCullough 1011.5)
a
b
c
a'
b'
c
c'
c2
c3

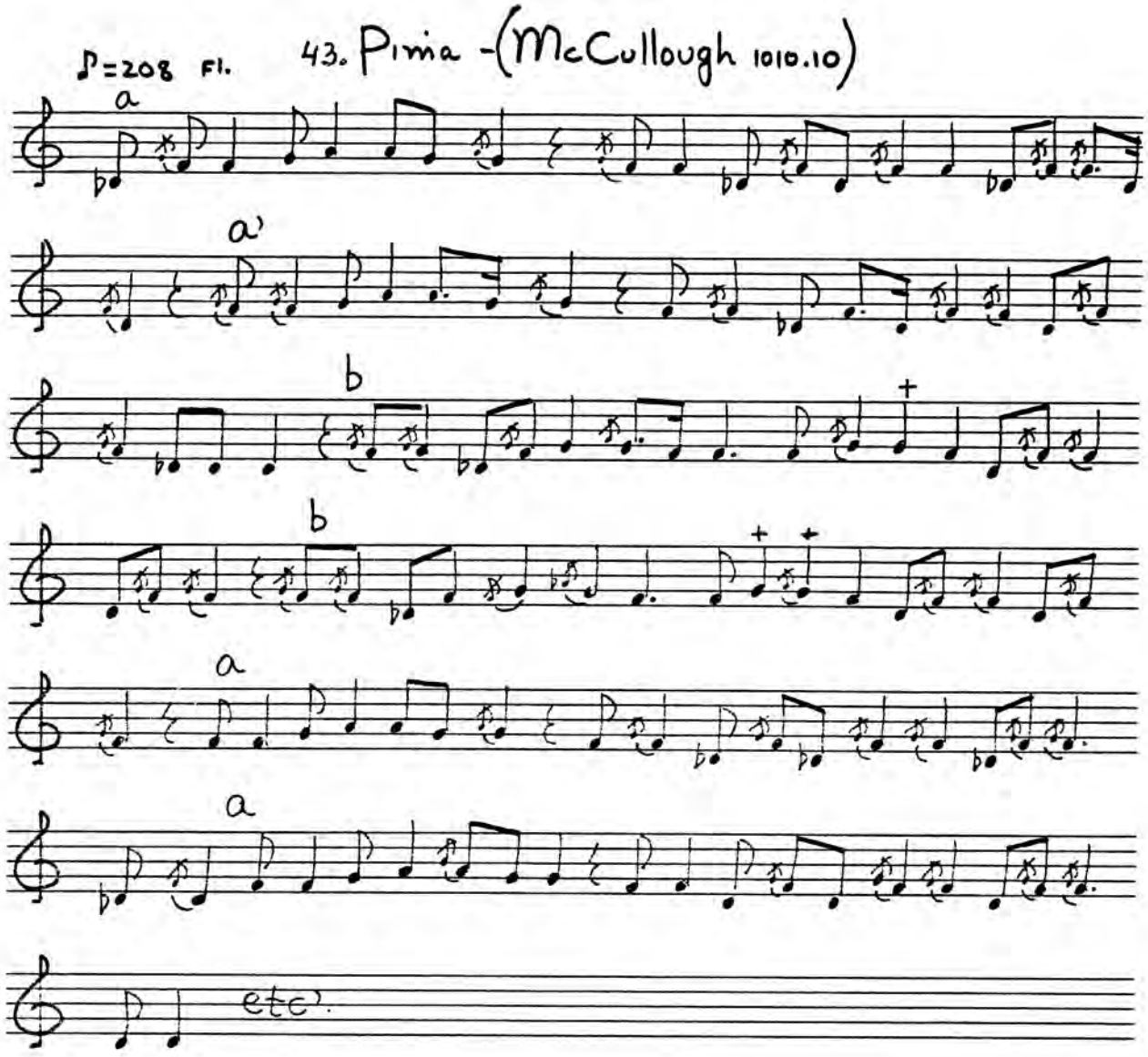

♩=132 vocal 38. Pima (McCullough 1011.6)
a
b
c
d
a
b
c
d

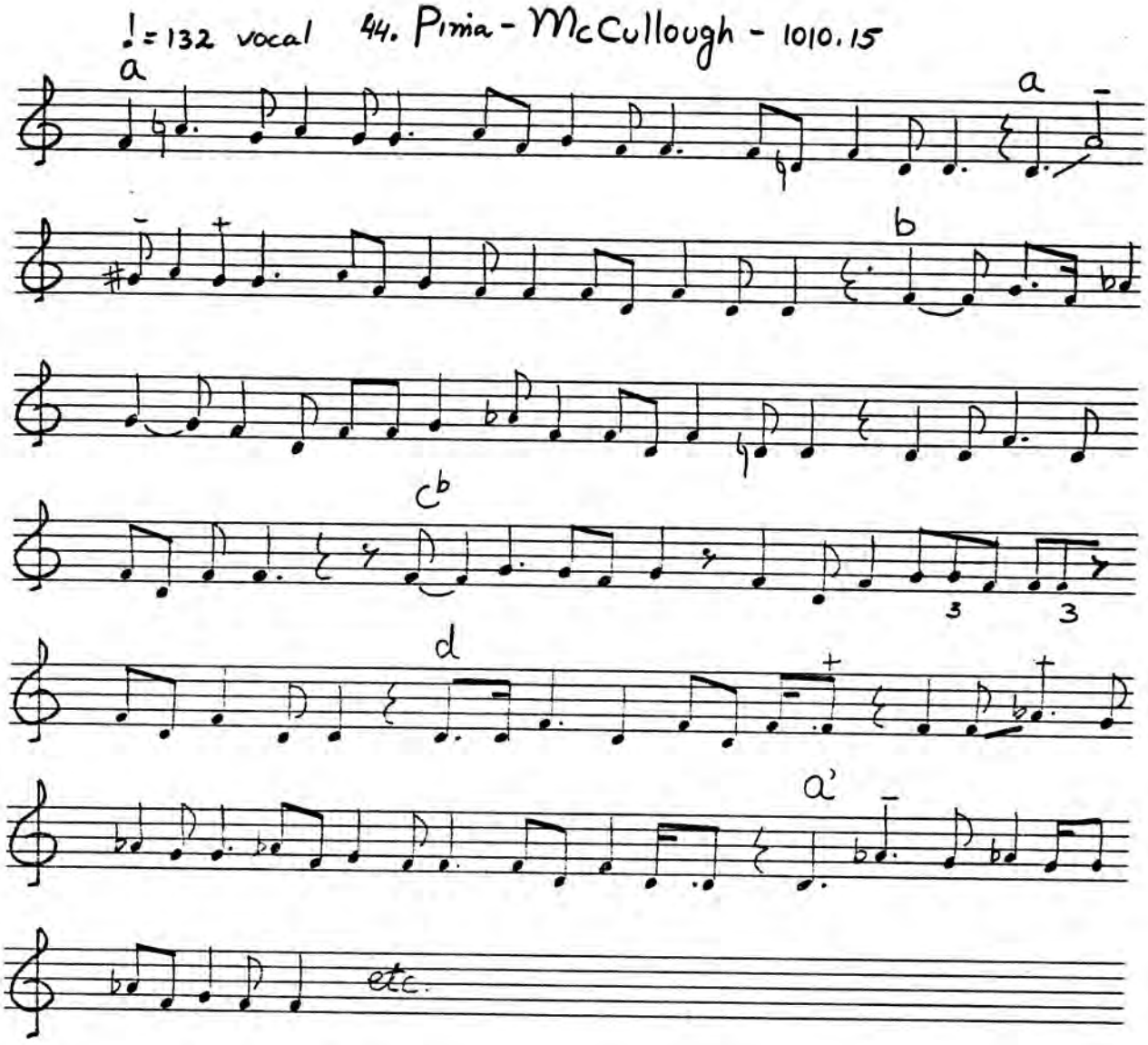

♪=208 Fl.
39. Pima (McCullough 1010.6)
a
a
b
b
a
etc.


♪ = 192 Fl
40. Prima (Mccullough 1011.7)
a
a
b
b
c
c
a
a
b'
b'
c'
c'
b
b
c
c

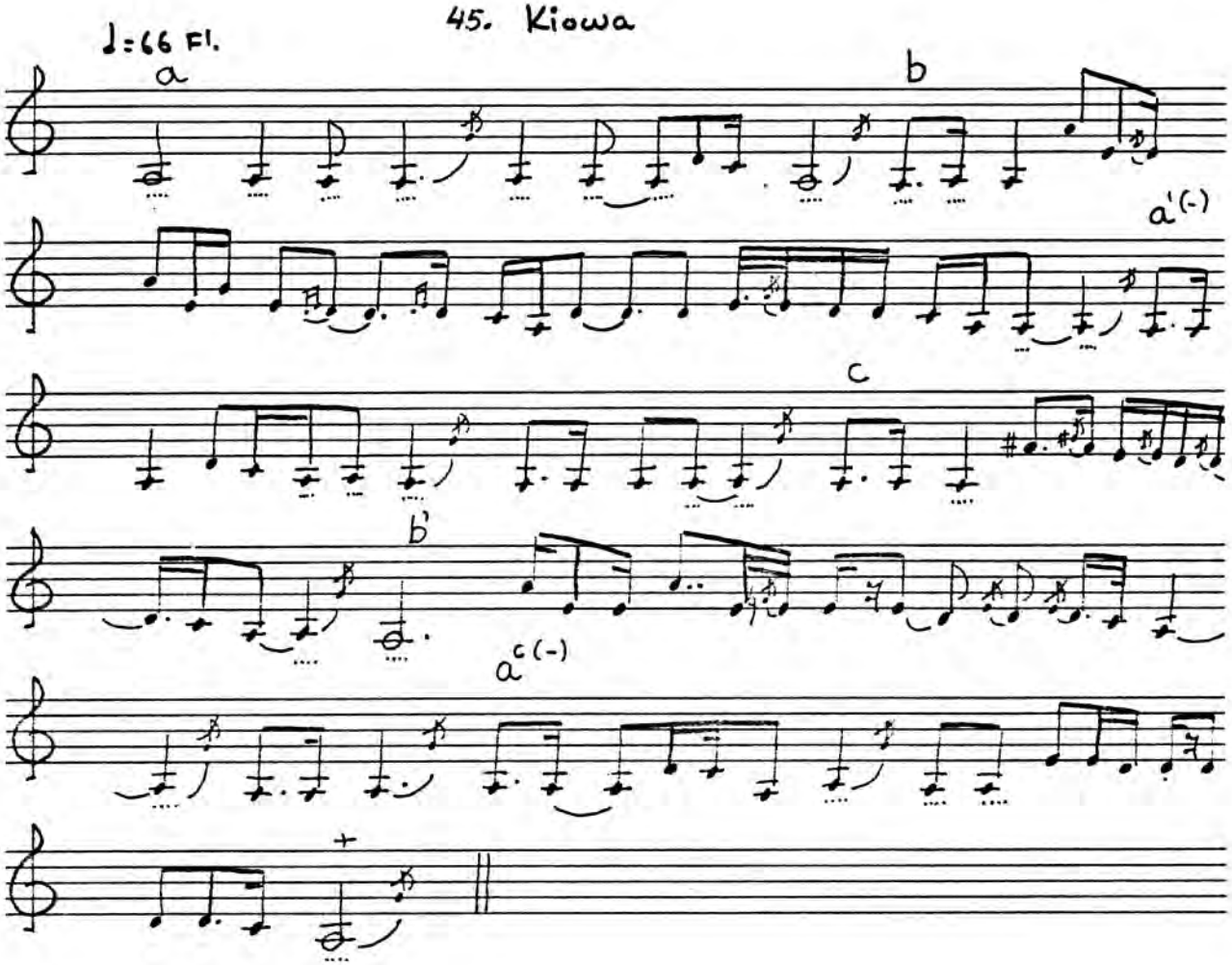

♩=176 Fl.
41. Prima -(McCullough 1010.4)
a
a
b
1
2
c
a
a
b'
1
2
c'
b²
1
2
c
b
etc

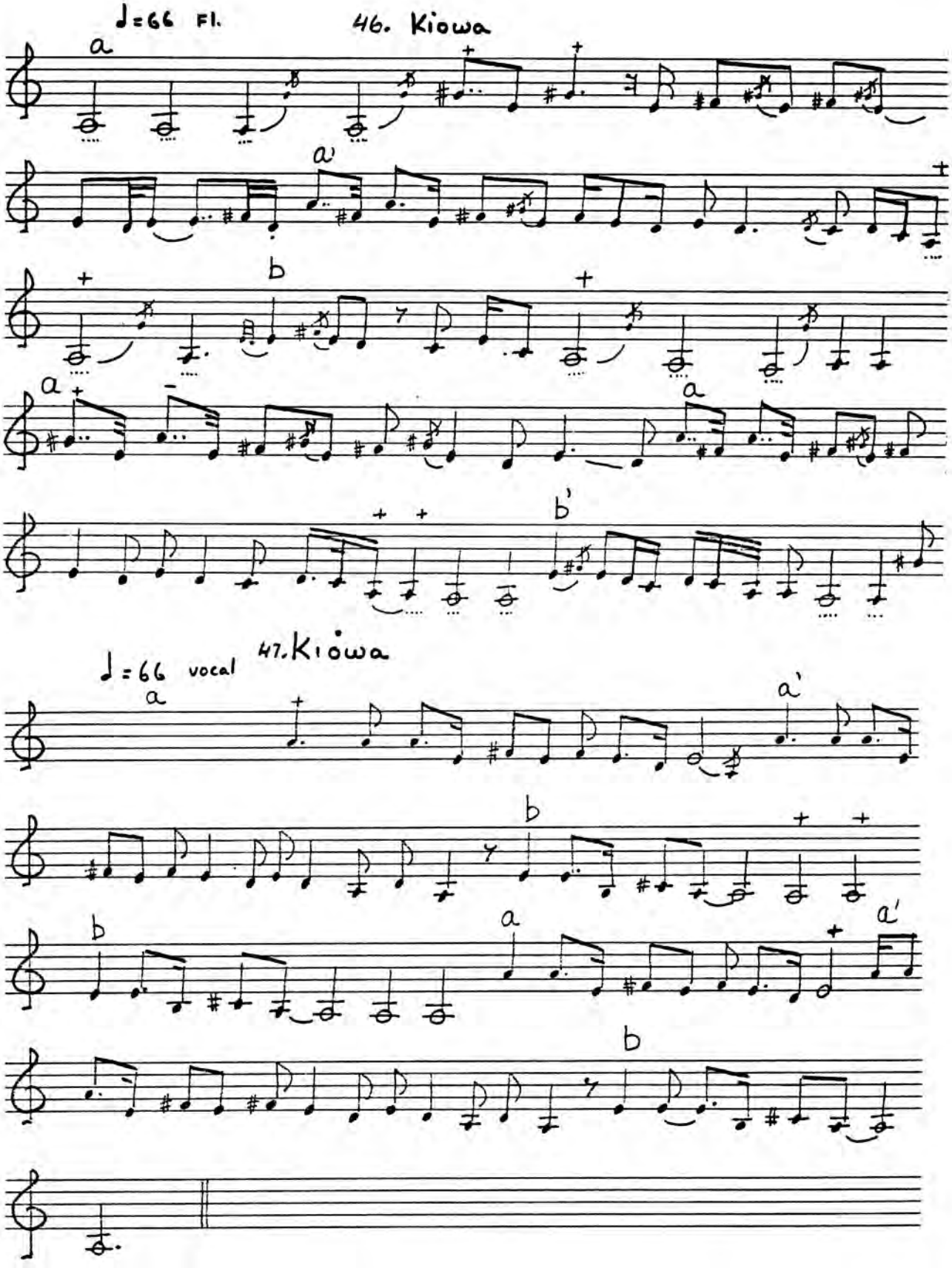

42. Pima - (McCullough 1010.8)
♩= 176 Fl.
a
a
b
b'
a
etc.


♪=208 Fl.
43. Pima -(McCullough 1010.10)
a
a'
b
b
a
a
etc.

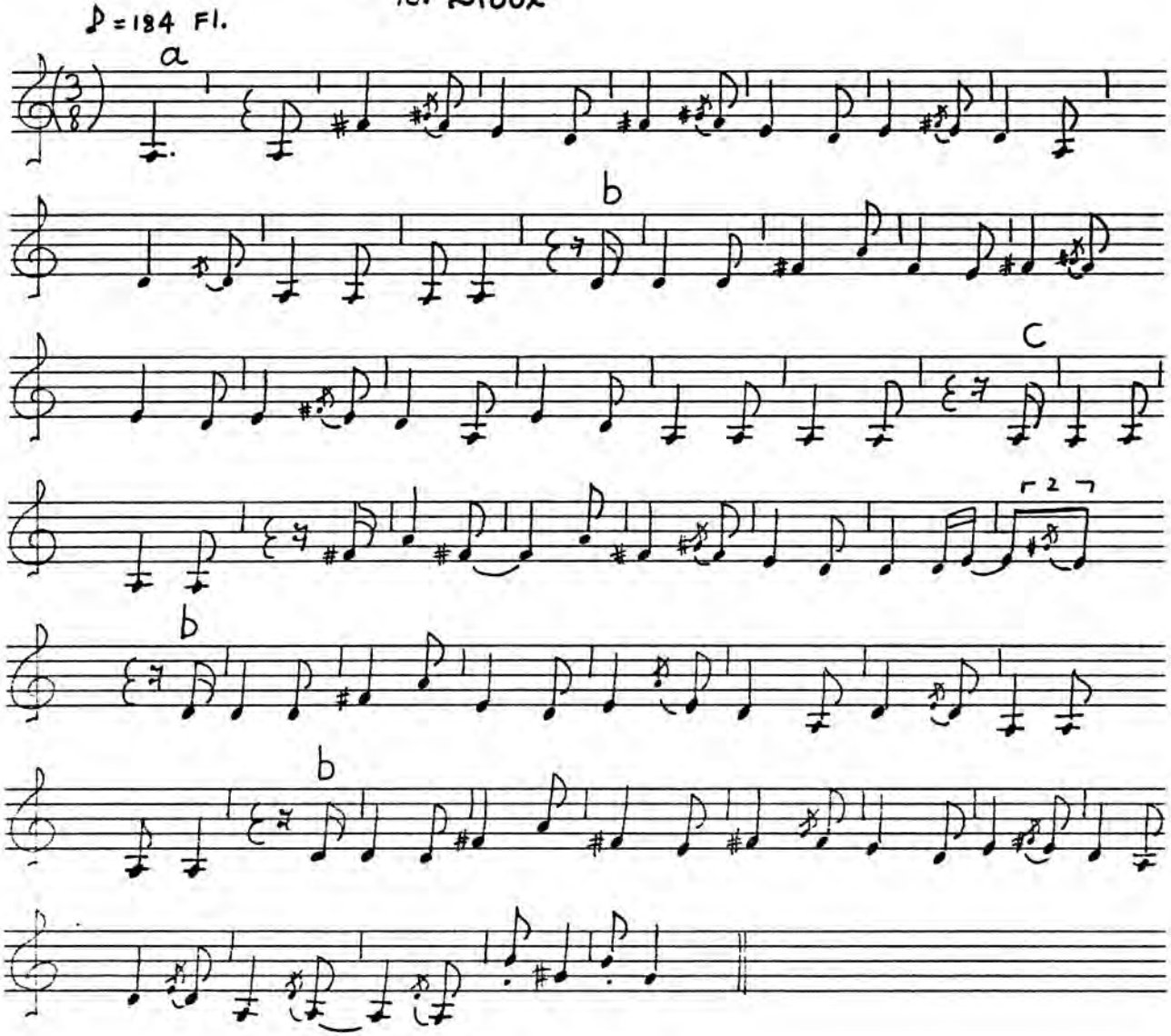

♩= 132 vocal 44. Pima - McCullough - 1010.15
a
a
b
c♭
3
3
d
a'
etc.

45. Kiowa




♩=66 Fl.
46. Kiowa
a
a'
b
a
a
b'
♩=66 vocal
47. Kiowa
a
a'
b
b
a
a'
b

48. Sioux



49. Flathead

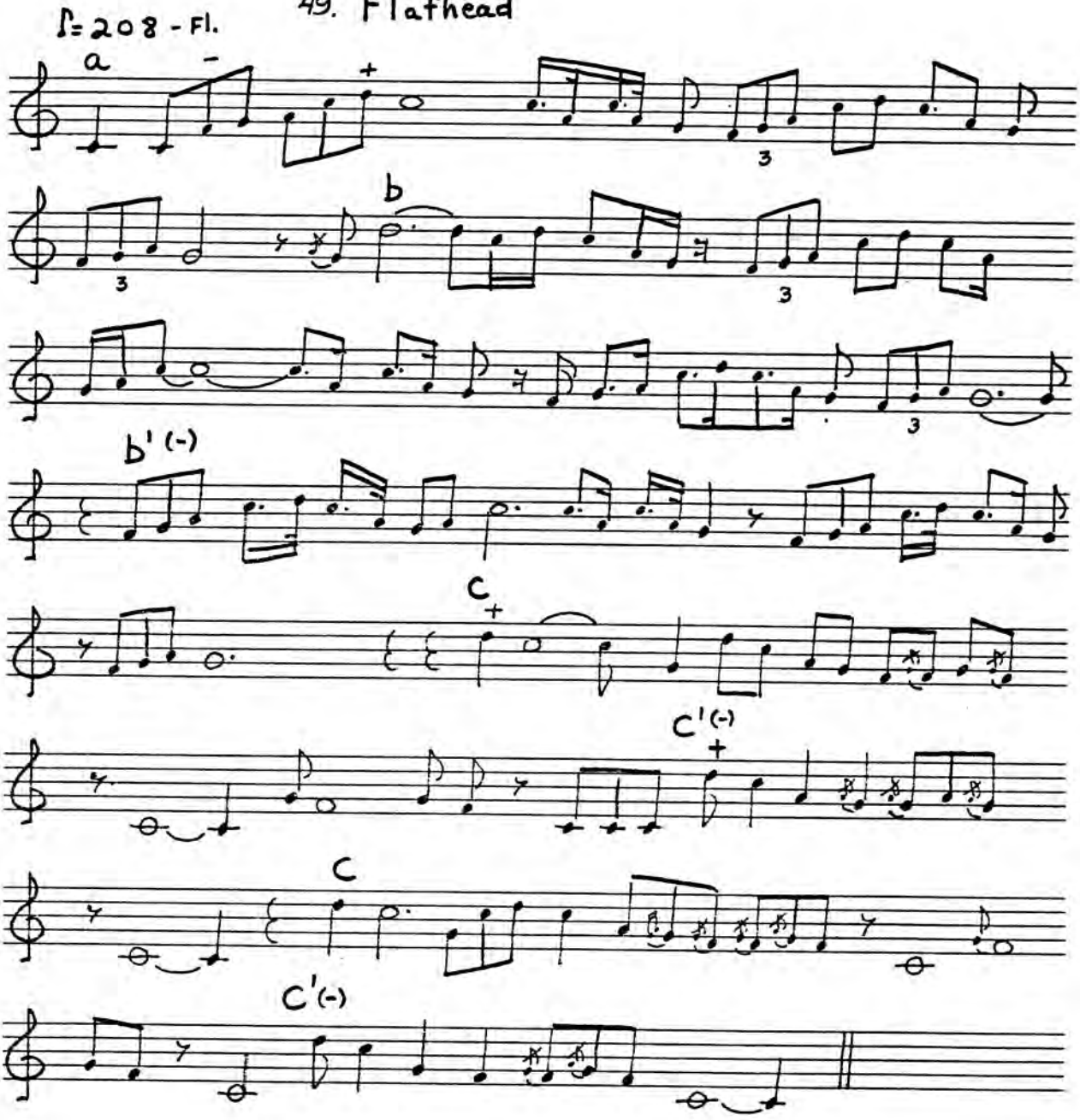


Fig. 1

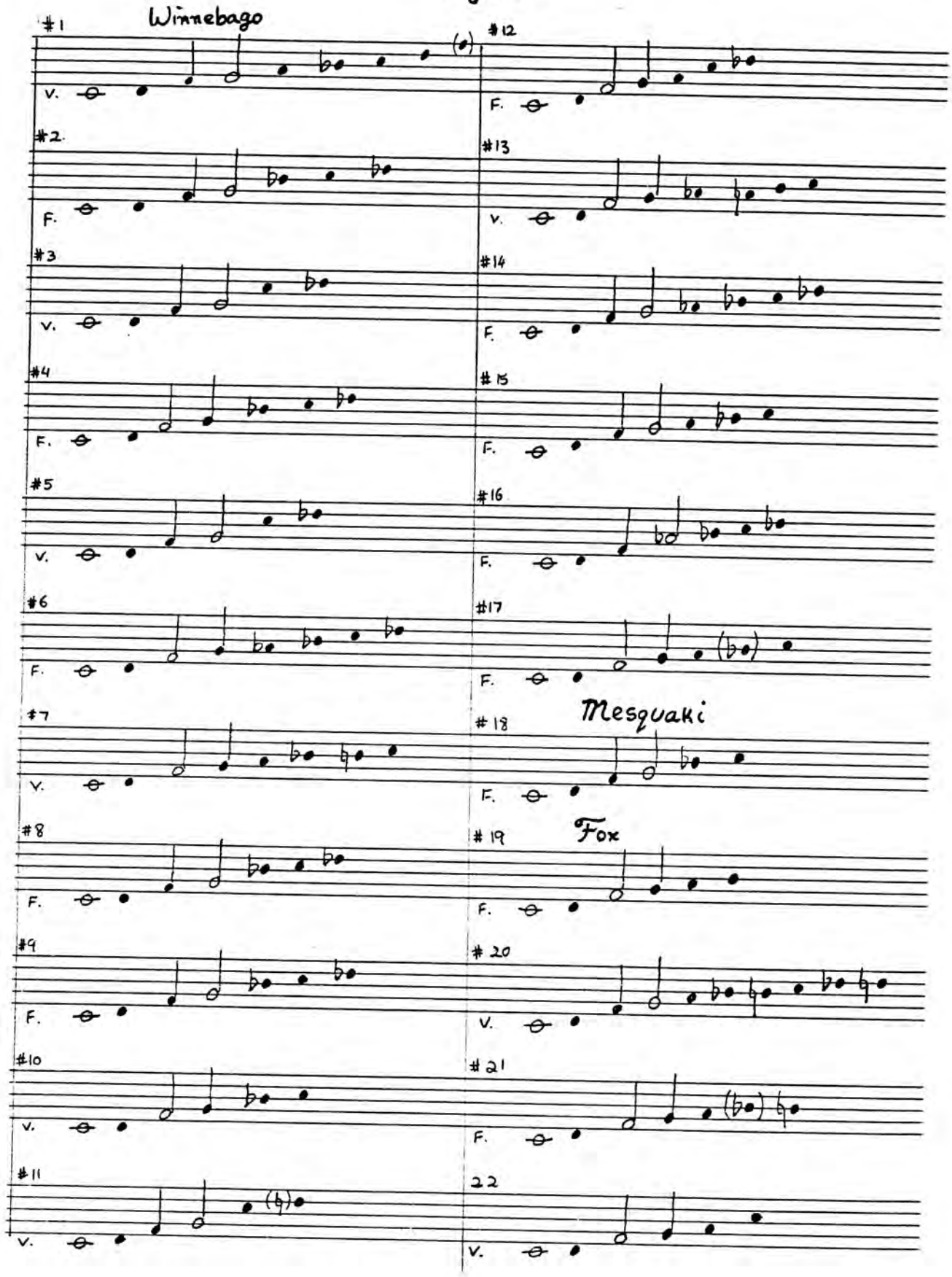

#1
Winnebago
V.
#2
F.
#3
V.
#4
F.
#5
V.
#6
F.
#7
V.
#8
F.
#9
F.
#10
V.
#11
V.
(♭)
#12
F.
#13
V.
#14
F.
#15
F.
#16
F.
#17
F.
(♭♭)
#18
Mesquaki
F.
#19
Fox
F.
#20
V.
#21
F.
(♭♭)
22
V.

Fig. 1 continued

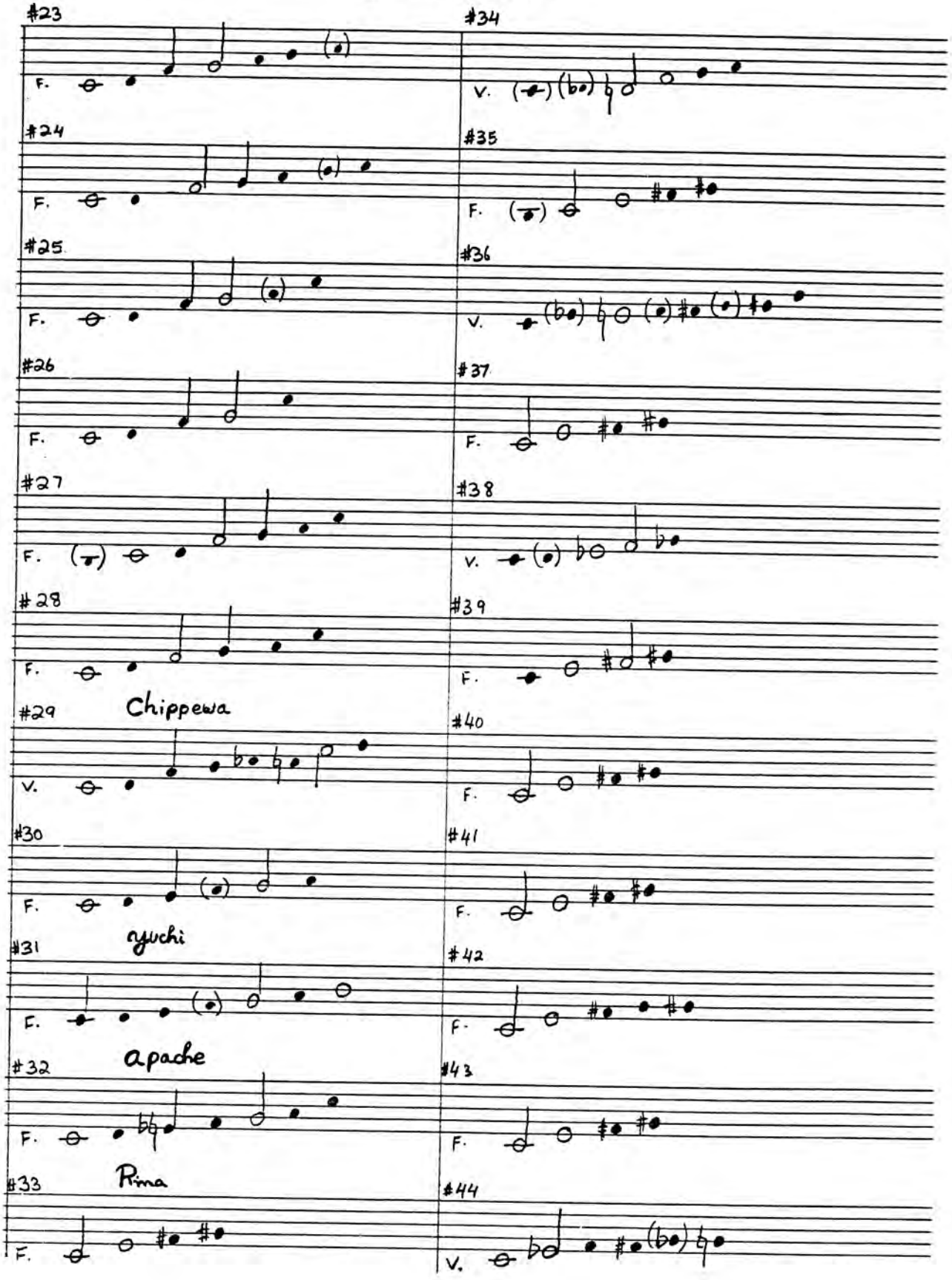


Fig 1. continued

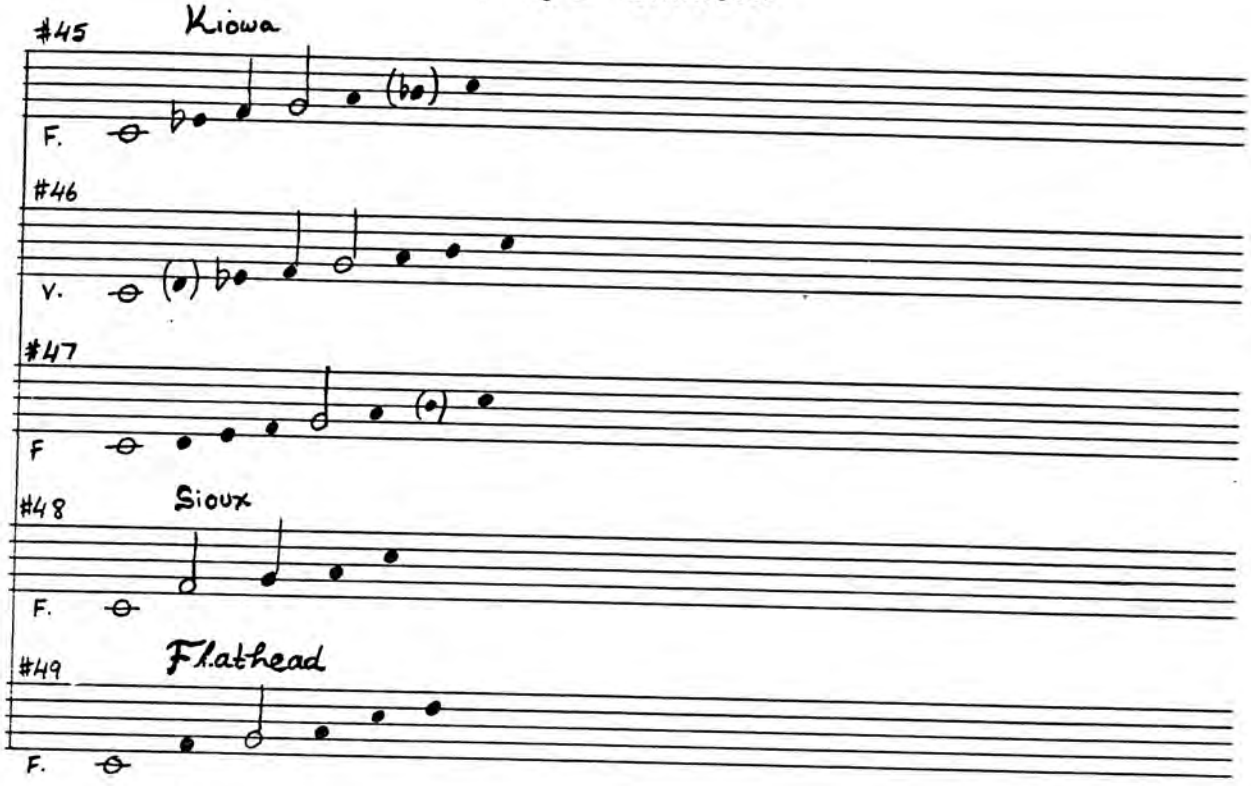


Fig. 2

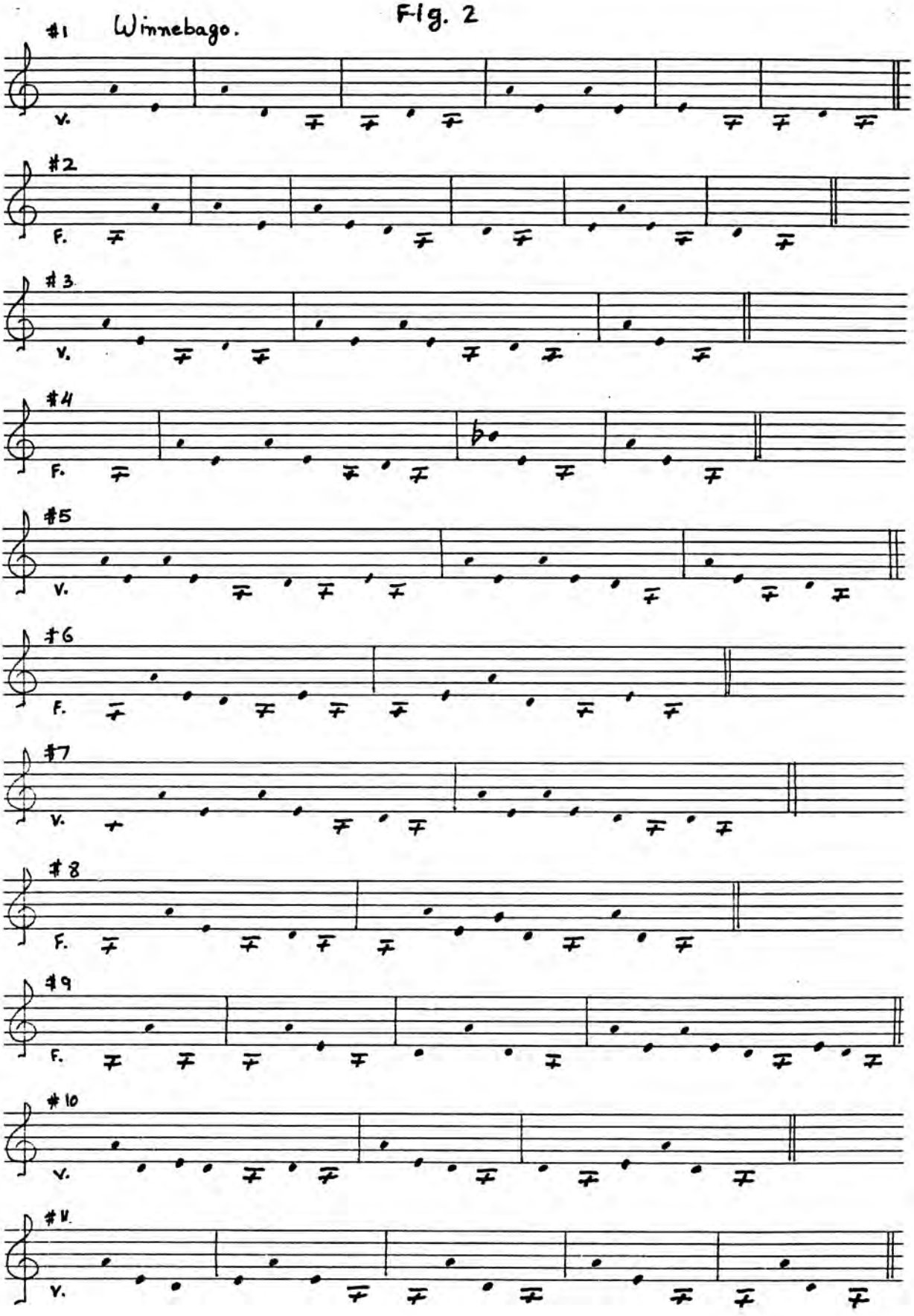


Fig. 2. continued.

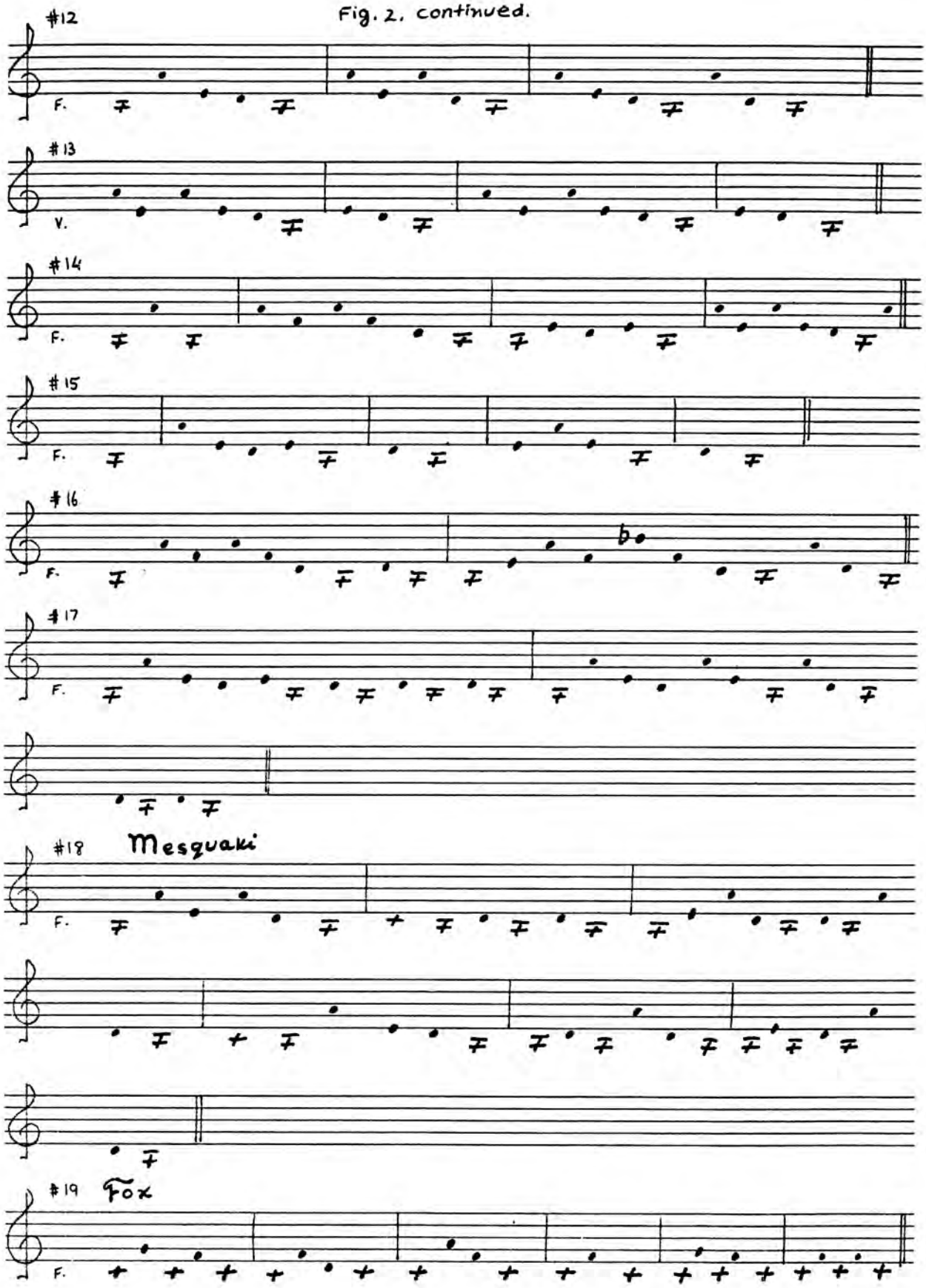


Fig. 2. continued

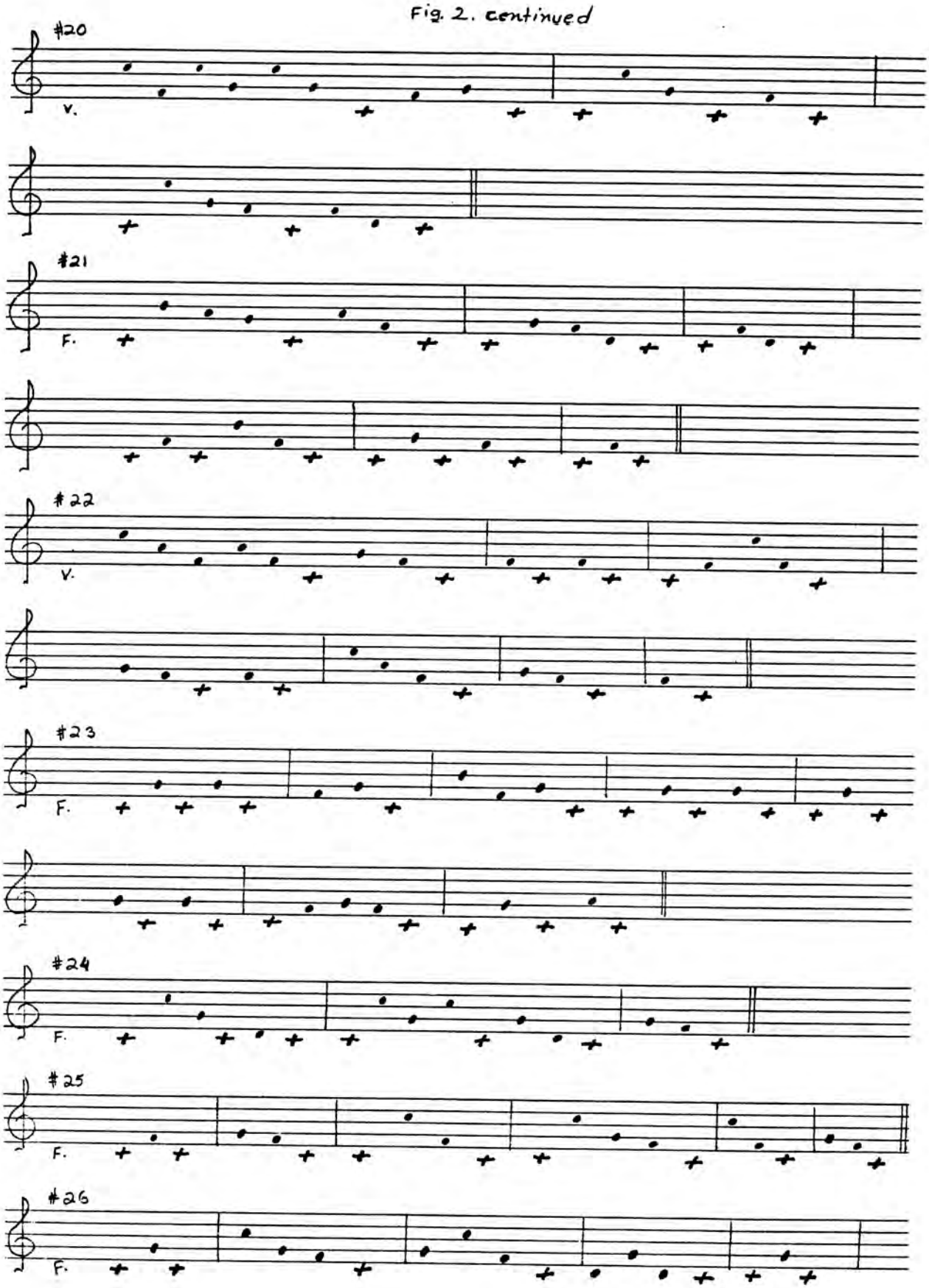


Fig.2. continued

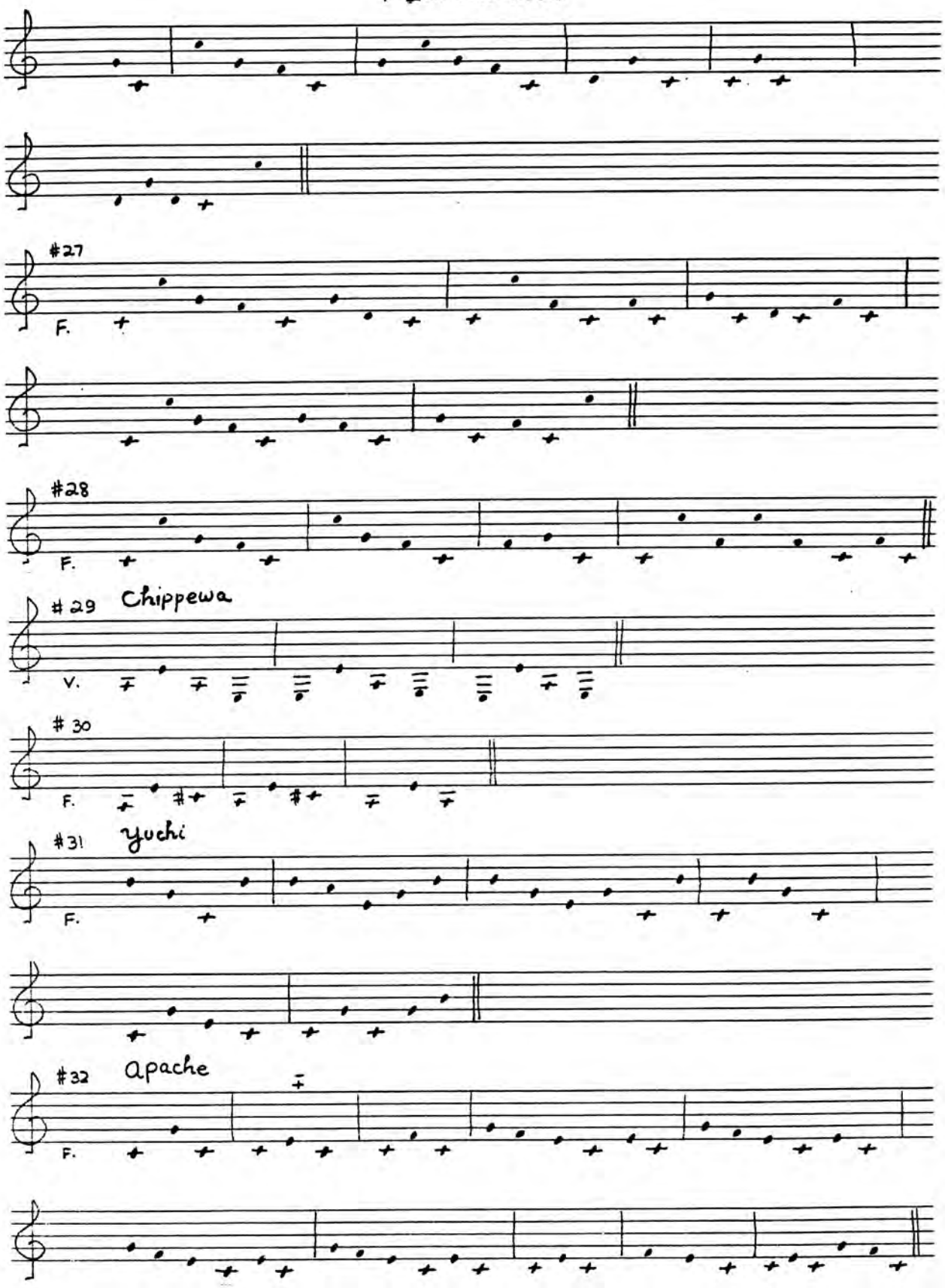


Fig. 2. continued.

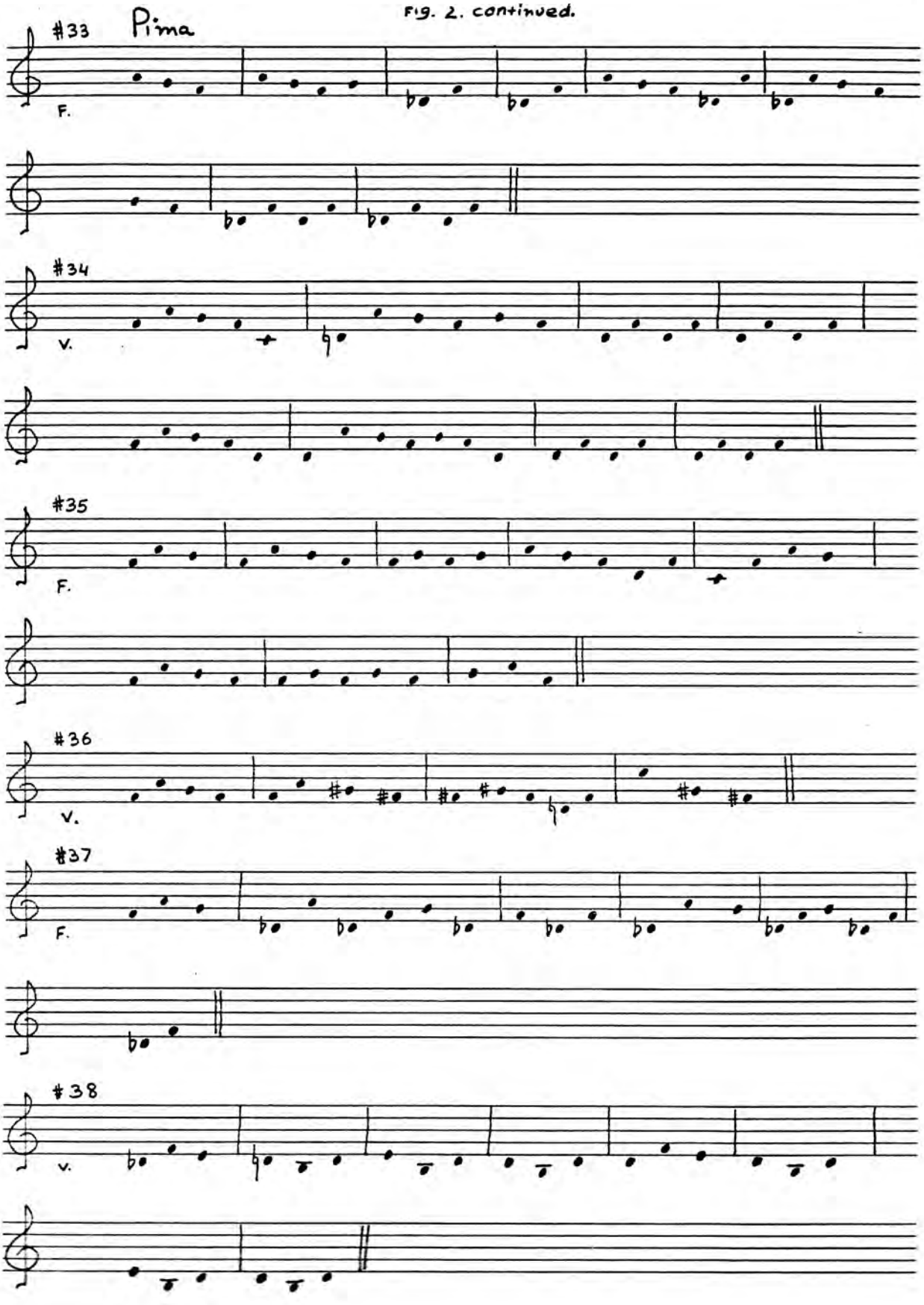


Fig. 2. continued.

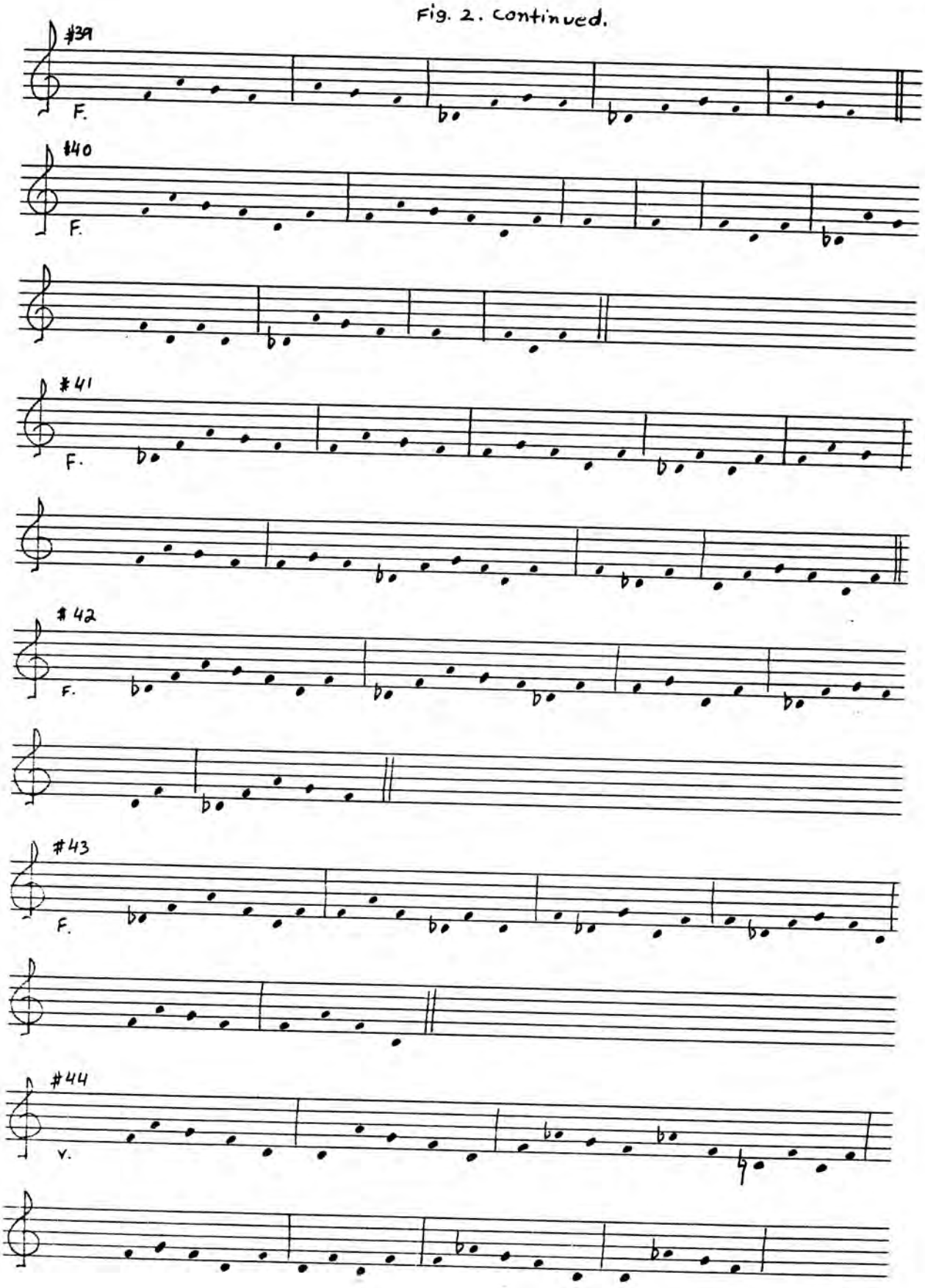


Fig. 2. continued.

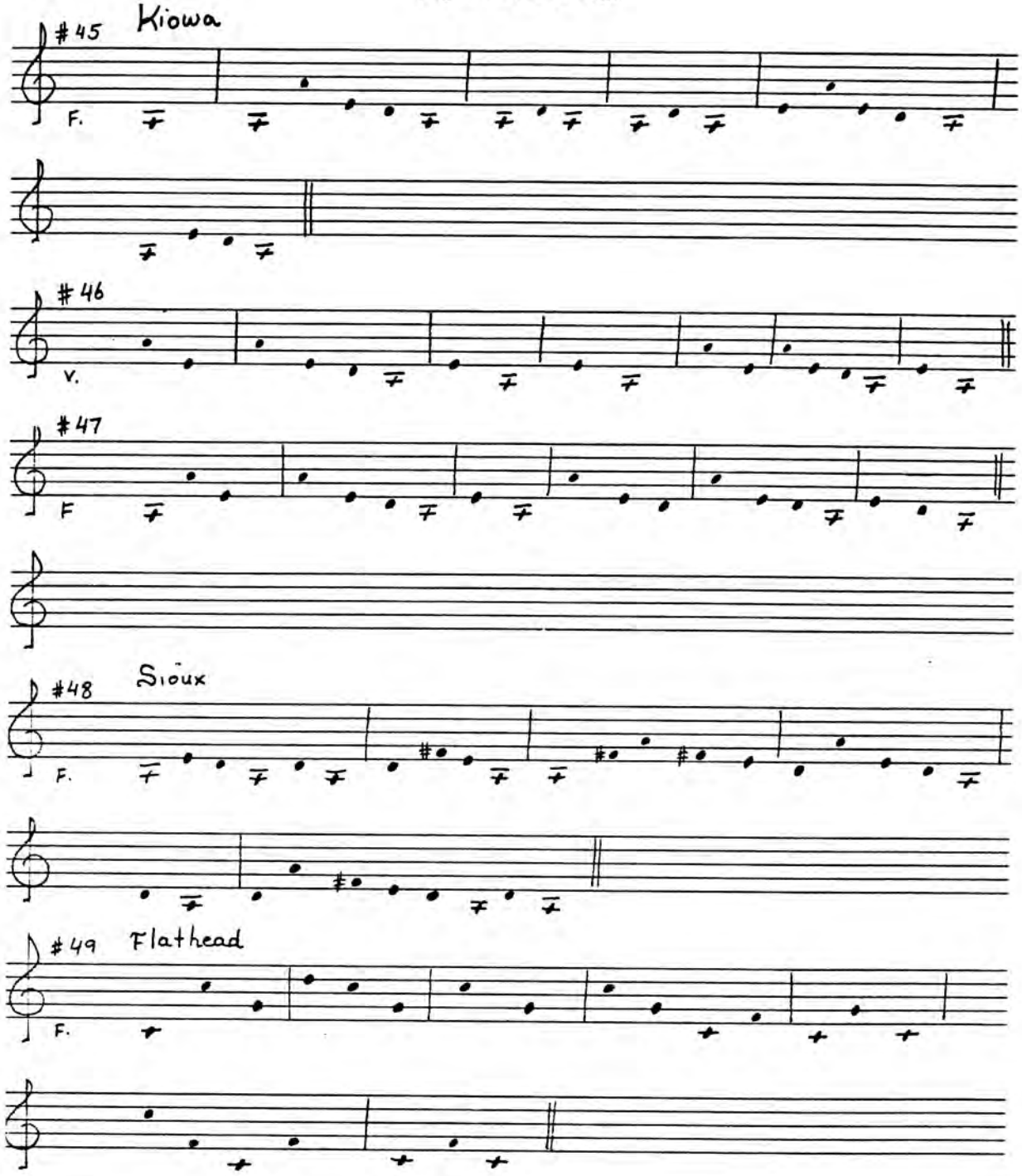


Table 1

Number of Tones in Scales of Flute Melodies

Tribe	Number of Tones						
	4 tones	5	6	7	8	9	10
Winnebago			1	7	2		
Mesquaki			1				
Fox		2	6				
Chippewa			1				
Yuchi			1				
Apache				1			
Pima	7	1					
Kiowa			1	1			
Sioux		1					
Flathead			1				
Total	7	4	12	9	2	0	0

Table 1a

Number of Tones in Scales of Vocal Melodies

Tribe	Number of Tones						
	4 tones	5	6	7	8	9	10
Winnebago			4		(2) 3	(1)	
Fox			1				1
Chippewa					1		
Pima	(2) 0	2	1		1		
Kiowa				1			
Total	(2) 0	2	6	1	(4) 5	(1)	1

Table 2

Number and Types of Intervals in Scales of Flute Renditions

Tribe	Intervals					
	2m	2M	3m	3M	4th	
Winnebago	12	37	16	0	0	
Mesquaki	0	3	2	0	0	
Fox	0	29	11	0	2	
Chippewa	0	3	1	0	0	
Pima	2	15	0	8	0	
Kiowa	2	10	1	0	0	
Sioux	0	2	1	0	1	
Flathead	0	3	1	0	1	
	16	102	33	8	4	Total
	14	87	33	0	4	Excluding Pima

Table 2a

Number and Types of Intervals in Scales of Vocal Renditions

Tribe	2m	2M	3m	3M	4th
Winnebago	9	21	8	0	3
Fox	5	6	3	0	0
Chippewa	2	3	2	0	0
Pima	11	7	5	0	0
Kiowa	1	2	2	0	0
Total	28	39	20	0	3

Table 3

Intervalic Structure in Scales of Flute Renditions

Tribe	I-II	II-III	III-IV	IV-V	V-VI	VI-VII	VII-VIII
Winnebago	2M	3m	2M	3m	2M	2m	-
Winnebago	2M	3m	2M	3m	2M	2m	-
Winnebago	2M	3m	2M	2m	2M	2M	2m
Winnebago	2M	3m	2M	3m	2M	2m	-
Winnebago	2M	3m	2M	3m	2M	2m	-
Winnebago	2M	3m	2M	2M	3m	2m	-
Winnebago	2M	3m	2M	2m	2M	2M	2m
Winnebago	2M	3m	2M	2M	2m	2M	-
Winnebago	2M	3m	3m	2M	2M	2m	-
Winnebago	2M	3m	2M	2M	3m	-	-
Mesquaki	2M	3m	2M	3m	2M	-	-
Fox	2M	3m	2M	2M	2M	-	-
Fox	2M	3m	2M	2M	2M	-	-
Fox	2M	3m	2M	2M	2M	-	-
Fox	2M	3m	2M	2M	3m	-	-
Fox	2M	3m	2M	4th	-	-	-
Fox	2M	3m	2M	4th	-	-	-
Fox	2M	3m	2M	2M	3m	-	-
Fox	2M	3m	2M	2M	3m	-	-
Chippewa	2M	2M	3m	2m	-	-	-
Yuchi	2M	2M	3m	2M	2M	-	-
Apache*	2M	2m/M	2m/M	2M	2M	3m	-
Pima	3M	2M	2M	-	-	-	-
Pima	3M	2M	2M	-	-	-	-
Pima	3M	2M	2M	-	-	-	-
Pima	3M	2M	2M	-	-	-	-
Pima	3M	2M	2M	-	-	-	-
Pima	3M	2M	2M	-	-	-	-
Pima	3M	2M	2m	-	-	-	-
Pima	3M	2M	2M	-	-	-	-
Kiowa	3m	2M	2M	2M	3m	-	-
Kiowa	2M	2M	2m	2M	2M	3m	-
Sioux	4th	2M	2M	3m	-	-	-
Flathead	4th	2M	2M	3m	2M	-	-

*In this song a natural 3rd is employed in the lowest 3rd.

Table 3a

Intervalic Structure in Scales of Vocal Renditions

Tribe	I-II	II-III	III-IV	IV-V	V-VI	VI-VII	VII-VIII	VIII-IX	IX-X
Winnebago	2M	3m	2M	2M	2m	2M	2M	-	-
Winnebago	2M	3m	2M	4th	2m	-	-	-	-
Winnebago	2M	3m	2M	4th	2m	-	-	-	-
Winnebago	2M	2m	2M	2M	2m	2m	2m	-	-
Winnebago	2M	3m	2M	3m	2M	-	-	-	-
Winnebago	2M	3m	2M	4th	2M	-	-	-	-
Winnebago	2M	3m	2M	2m	2m	2M	2m	-	-
Fox	2M	3m	2M	2M	2m	2m	2m	2m	2m
Fox	2M	3m	2M	2M	3m	-	-	-	-
Chippewa	2M	3m	2M	2m	2m	3m	2M	-	-
Pima	3m	2M	2M	-	-	-	-	-	-
Pima	3M	2M	2M	3m	-	-	-	-	-
Pima	3m	2M	2m	-	-	-	-	-	-
Pima	3m	2M	2m	2m	-	-	-	-	-
Kiowa	3m	2M	2M	2M	2M	2m	-	-	-

Table 4

Place of Pillar Tones in Scales of Flute Renditions

T = tonic; 2 = 2nd pillar tone; 3 = 3rd pillar tone

Tribe	T	2	3
Winnebago	I	IV	III
Winnebago	I	III	IV
Winnebago	I	III	IV
Winnebago	I	IV	III
Winnebago	I	IV	III
Winnebago	I	III	IV
Winnebago	I	IV	III
Winnebago	I	IV	III
Winnebago	I	IV	III
Winnebago	I	III	IV
Mesquaki	I	IV	III
Fox	I	III	IV
Fox	I	III	IV
Fox	I	IV	III
Fox	I	III	IV
Fox	I	IV	III
Fox	I	IV	III
Fox	I	III	IV
Fox	I	III	IV
Chippewa	I	VII	III
Yuchi	VI	IV	I
Apache	I	V	III
Pima	II	I	-
Pima	II	I	-
Pima	II	I	-
Pima	II	III	-
Pima	II	I	-
Pima	II	I	-
Pima	II	I	-
Pima	II	I	-
Kiowa	I	IV	III
Kiowa	I	V	-
Sioux	I	II	III
Flathead	I	III	-

Table 4a

Place of Pillar Tones in Scales of Vocal Renditions

T = tonic; 2 = 2nd pillar tone; 3 = 3rd pillar tone

Tribe	T	2	3
Winnebago	I	IV	III
Winnebago	I	IV	III
Winnebago	I	IV	III
Winnebago	I	III	IV
Winnebago	I	III	IV
Winnebago	I	IV	III
Winnebago	I	III	IV
Fox	I	IV	III
Fox	I	III	IV
Chippewa	I	VII	III
Pima	II	I	-
Pima	II	-	-
Pima	II	III	-
Pima	I	II	-
Kiowa	I	IV	III

Table 5

Range of Scales in the Flute Renditions

Tribe	No. of Songs	Range
Winnebago	2	8ve
Winnebago	8	9m
Mesquaki	1	8ve
Fox	3	7M
Fox	5	8ve
Chippewa	1	6M
Yuchi	1	7M
Apache	1	8ve
Pima	8	5th
Kiowa	2	8ve
Sioux	1	8ve
Flathead	1	9M

Table 5a

Range of Scales in the Vocal Renditions

Tribe	No. of Songs	Range
Winnebago	3	8ve
Winnebago	2	9m
Winnebago	2	9M
Fox	1	8ve
Fox	1	9M
Chippewa	1	9M
Pima	3	5th
Pima	1	7M
Kiowa	1	8ve

Table 6

Form of Flute Renditions

Tribe	Progressive	Iterative	Reverting
Winnebago			X
Winnebago		X	
Winnebago		X	
Winnebago		X	
Winnebago	X		
Winnebago		X	
Winnebago	X		
Winnebago		X	
Winnebago			X
Winnebago		X	
Mesquaki			X
Fox			X
Fox			X
Fox	X (strophic)		
Fox		X	
Fox		X	
Fox		X (strophic)	
Fox			X
Fox			X
Chippewa		X	
Yuchi			X
Apache		X	
Pima		X	
Pima		X (strophic)	
Pima		X	
Pima		X	
Pima		X	
Pima		X	
Pima		X	
Pima		X	
Kiowa		X	
Kiowa		X	
Sioux		X	
Flathead		X	
	3	23	8

Table 6a

Form of Vocal Renditions

Tribe	Progressive	Iterative	Reverting
Winnebago			X
Winnebago		X	
Winnebago		X	
Winnebago	X		
Winnebago	X		
Winnebago		X	
Winnebago		X	
Fox		X	
Fox			X (strophic)
Chippewa		X	
Pima		X	
Pima	X		
Pima	X (strophic)		
Pima		X	
Kiowa		X	
	4	9	2

Table 6b

Form of Flute Renditions

Song No.	Form	Scheme
2	reverting	$abc^{b}db^{1}d^{1}$
4	iterative	$abb^{1(-)}{}_{b}{}^{2(+)}$
6	iterative	abb^{1}
8	iterative	$aa^{1(+)}$
9	progressive	abcd
12	iterative	$aa^{1}a^{2}a^{3}$
14	progressive	$abcd^{b}$
15	iterative	$ab^{1(-)}{}_{b}{}^{2}b^{1(-)}$
16	reverting	ab^{a}
17	iterative	aa^{1}
18	reverting	$abc^{a}a^{b}b^{1}c^{a}$
19	reverting	$abcda^{b}b$
21	reverting	$abc^{a}d^{a}a^{1}c^{a}$
23	progressive (stroph.)	$abcdab^{1}cd$
24	iterative	$aa^{1}b$
25	iterative	$abb^{1}b^{2}a^{1}b^{3}$
26	iterative	$abcc^{1}babccbab$
27	reverting	$abcb^{1}c$
28	reverting	$abc^{b}d^{b}$
30	iterative	aaaa
31	reverting	$abc^{a}a^{1}ded^{1}$
32	iterative	$abcd^{b}ee^{1}e^{2}b^{1(-)}{}_{c}{}^{1(-)}{}_{b}{}^{a}$
33	iterative	$aa^{1}bb^{1}ca^{2}b^{2}b^{2}$

Table 6b - Continued

Song No.	Form	Scheme
35	iterative	$aa^{1(+)}{}_{bc}{}^{b}{}_{a}{}^{1}{}_{a}{}^{2}{}_{b}{}^{1}{}_{c}{}^{b^{1}}$
37	iterative	$abca^{1}{}_{b}{}^{1}{}_{cc}{}^{1(-)}{}_{c}{}^{2(-)}{}_{c}{}^{3(-)}$
39	iterative	aabba
40	iterative	aabbccaa
41	iterative	$aabcaab^{1}{}_{c}{}^{1}{}_{b}{}^{2}{}_{cb}$
42	iterative	$aabb^{1}{}_{a}$
43	iterative	$aa^{1}{}_{bbaa}$
45	iterative	$aba^{1(-)}{}_{cb}{}^{1}{}_{a}{}^{1(-)}$
46	iterative	$aa^{1}{}_{bbaa}{}^{1}{}_{b}$
48	iterative	abcbb
49	iterative	$abb^{1(-)}{}_{cc}{}^{1(-)}{}_{cc}{}^{1(-)}$

Table 6c

Form of Vocal Renditions

Song No.	Form	Scheme
1	revertive	$abc^{a}8^{b}d^{a}ec^{1}$
3	iterative	$aa^{1(-)}{}_{a}{}^{2}{}_{a}{}^{1(-)}$
5	iterative	abb
7	progressive	ab
10	progressive	abc
11	iterative	$aa^{1}{}_{4}b^{a}{}_{a}{}_{4}b^{a}$
13	iterative	$aa^{1(-)}{}_{b}{}^{a}{}_{a}{}^{2}$
20	iterative	$aa^{1}{}_{a}{}^{2}$
22	revertive	$abcdbca^{1}bc$
29	iterative	aaaa
34	iterative	abccabcc
36	progressive	$ab^{a}cd$
38	progressive	abcdabcd
44	iterative	$aabc^{b}da^{1}$
47	iterative	$aabaab^{1}$

Table 7

Melodic Intervals in Flute Renditions

Tribe	Total No. Intervals in Song	Primes	2M	2m	3M	3m	4th	5th	7th	8ve	9th	Most Common 1	2	3
Winnebago	44	9	13	4	0	8	6	0	0	4	0	2M	1	3m
Winnebago	52	9	12	8	0	8	6	3	0	5	1	2M	1	2m/3m
Winnebago	38	4	14	2	0	7	5	2	0	4	0	2M	3m	4th
Winnebago	45	6	12	6	0	10	2	2	1	6	0	2M	3m	1/8ve
Winnebago	59	15	19	2	0	7	8	1	0	7	0	2M	1	4th
Winnebago	40	5	7	2	0	7	14	0	0	5	0	4th	2M/3m	1/8ve
Winnebago	53	18	13	3	2	3	5	3	0	6	0	1	2M	8ve
Winnebago	46	18	5	0	0	7	10	0	2	4	0	1	4th	3m
Winnebago	50	14	9	5	1	10	2	1	2	6	0	1	3m	2M/8ve
Winnebago	66	20	12	1	0	6	20	1	0	6	0	1/4th	2M	3m/8ve
Mesquaki	122	61	16	0	0	16	18	2	0	9	0	1	4th	2M/3m
Fox	66	37	13	0	3	6	1	5	1	0	0	1	2M	3m
Fox	77	33	23	0	2	5	5	0	9	0	0	1	2M	7th
Fox	132	48	43	8	5	12	6	5	5	0	0	1	2M	3m
Fox	62	20	20	0	1	8	7	2	1	3	0	1/2M	3m	4th
Fox	59	19	17	0	0	9	8	2	0	4	0	1	2M	3m
Fox	107	41	38	0	0	10	11	2	0	5	0	1	2M	4th
Fox	109	43	34	0	0	13	12	0	0	7	0	1	2M	3m
Fox	56	20	17	0	0	7	7	2	0	3	0	1	2M	3m/4

Table 7 - Continued

Tribe	Total No. Intervals in Song	Primes	2M	2m	3M	3m	4th	5th	7th	8ve	9th	Most Common 1	2	3
Yuchi	140	20	65	1	4	31	1	4	14	0	0	2M	3m	1
Apache	108	13	47	14	15	5	6	7	0	1	0	2M	3M	2m
Pima	126	50	42	0	34	0	0	0	0	0	0	1	2M	3M
Pima	149	47	86	0	15	0	1	0	0	0	0	2M	1	3M
Pima	124	52	27	0	44	0	1	0	0	0	0	1	3M	2M
Pima	81	35	38	0	8	0	0	0	0	0	0	1/2M	3M	-
Pima	140	55	47	0	38	0	0	0	0	0	0	1	2M	3M
Pima	136	52	50	0	34	0	0	0	0	0	0	1	2M	3M
Pima	111	32	46	4	39	0	0	0	0	0	0	2M	1	3M
Pima	102	40	20	0	42	0	0	0	0	0	0	3M	1	2M
Kiowa	86	50	14	0	0	9	9	1	0	2	0	1	2M	3m/4
Kiowa	66	13	31	0	7	5	4	4	2	0	0	2M	1	3M
Sioux	82	35	23	0	3	9	12	0	0	0	0	1	2M	3m
Flathead	123	5	80	0	0	22	8	6	0	0	0	2M	3m	4
Total	2857	939	953	60	297	240	195	55	37	87	1	2M	3M	3m
Without Pima	2888	576	597	56	43	240	193	55	37	87	1	2M	1	3m

Table 7a

Melodic Intervals in Vocal Renditions

Tribe	Total No. Intervals in Song	Prime	2M	2m	3M	3m	4th	5th	7th	8ve	9th	Most Common 1	2	3
Winnebago	76	42	12	0	0	9	10	2	0	1	0	1	2M	4
Winnebago	46	17	8	4	0	6	9	0	0	2	0	1	4	2M
Winnebago	78	44	11	3	0	9	7	2	0	2	0	1	2M	3m
Winnebago	43	15	16	0	0	6	6	0	0	1	0	2M	1	3m/4
Winnebago	55	18	18	0	0	8	8	1	0	2	0	1/2M	3m/4	8
Winnebago	45	15	9	0	0	3	15	0	0	3	0	1/4	2M	3m/8
Winnebago	64	25	16	7	3	5	5	2	0	1	0	1	2M	2m
Fox	111	65	19	3	0	8	10	2	0	4	0	1	2M	3m
Fox	118	54	13	0	0	15	14	12	0	8	0	1	3m	4
Chippewa	63	20	15	1	2	21	0	1	0	3	0	3m	1	2M
Pima	107	50	24	0	3	27	1	2	0	0	0	1	3m	2M
Pima	77	34	26	9	7	0	0	1	0	0	0	1	2M	2m
Pima	85	44	12	4	0	25	0	0	0	0	0	1	3m	2M
Pima	91	27	15	13	3	31	0	2	0	0	0	1	3m	2M
Kiowa	74	15	39	0	7	6	4	3	0	0	0	2M	1	3M
Total	1133	485	253	44	25	179	89	30	0	27	0	1	2M	3m

Table 8

Final Cadences in the Flute Renditions

Tribe	Direction	Tones Used	Last Two Intervals	
				Last Interval
Winnebago	Descending	3 - 2 - 1	3m	2M
Winnebago	Descending	3 - 2 - 1	3m	2M
Winnebago	Descending	3 - 2 - 1	3m	2M
Winnebago	Descending	3 - 2 - 1	3m	2M
Winnebago	Descending	3 - 2 - 1	3m	2M
Winnebago	Descending	3 - 2 - 1	3m	2M
Winnebago	Descending	3 - 2 - 1	3m	2M
Winnebago	Descending	3 - 2 - 1	3m	2M
Winnebago	Descending	3 - 2 - 1	3m	2M
Winnebago	Descending	3 - 2 - 1	3m	2M
Mesquaki	Descending	3 - 2 - 1	3m	2M
Fox	Descending	3 - 2 - 1	3m	2M
Fox	Descending	3 - 2 - 1	3m	2M
Fox	Descending	3 - 2 - 1	3m	2M
Fox	Descending	3 - 2 - 1	3m	2M
Fox	Descending	3 - 2 - 1	3m	2M
Fox	Ascending	2 - 1 - 5	2M	8ve
Fox	Descending	3 - 2 - 1	3m	2M
Fox	Descending	3 - 2 - 1	3m	2M
Chippewa	Undulating	1 - 2 - 1	2M	2M
Yuchi	Undulating	6 - 1 - 6	7M	7M
Apache	Descending	4 - 3 - 1	2m/M	neutral 3rd
Pima	Undulating	2 - 1 - 2	3M	3M
Pima	Undulating	2 - 1 - 2	3M	3M
Pima	Undulating	2 - 1 - 2	3M	3M
Pima	Descending	4 - 3 - 2	2M	2M
Pima	Undulating	2 - 1 - 2	3M	3M
Pima	Undulating	2 - 1 - 2	3M	3M
Pima	Undulating	2 - 1 - 2	3M	3M
Pima	Undulating	2 - 1 - 2	3M	3M
Kiowa	Descending	3 - 2 - 1	2M	3m
Kiowa	Descending	3 - 2 - 1	2M	3m
Sioux	Undulating	1 - 2 - 1	4th	4th
Flathead	Undulating	2 - 3 - 2	2M	2M

Table 8a

Final Cadences in Vocal Renditions

Tribe	Direction	Tones Used	Last Two Intervals	
				Last Interval
Winnebago	Descending	3 - 2 - 1	3m	2M
Winnebago	Descending	3 - 2 - 1	3M	2M
Winnebago	Descending	3 - 2 - 1	3M	2M
Winnebago	Descending	3 - 2 - 1	3M	2M
Winnebago	Descending	3 - 2 - 1	3M	2M
Winnebago	Descending	3 - 2 - 1	3M	2M
Winnebago	Descending	3 - 2 - 1	3M	2M
Fox	Descending	3 - 2 - 1	3M	2M
Fox	Descending	3 - 2 - 1	3M	2M
Chippewa	Descending	3 - 2 - 1	3M	2M
Pima	Undulating	2 - 1 - 2	3m	3m
Pima	Undulating	2 - 1 - 2	3m	3m
Pima	Undulating	2 - 1 - 2	3m	3m
Pima	Undulating	1 - 2 - 1	2M	2M
Kiowa	Descending	4 - 3 - 1	2M	3m

Table 9

Non-Final Cadences in Flute Melodies

Tribe	Song No.	Phrase No.	Direction	Tone Used	Last Two Intervals	
Winnebago	2	2	Descending	5 - 4	2M	3m
Chippewa	30	1	Undulating	3 - 4	3m	3m
Pima	33	1	Undulating	1 - 2 - 1	3m	3m
Pima	35	2	Undulating	1 - 2 - 1	3m	3m
Pima	35	1	Undulating	3 - 2 - 3	2M	2M
Pima	37	1	Undulating	3 - 2 - 3	2M	2M
Pima	37	2	Descending	3 - 2 - 1	2M	3M
Pima	40	1	Undulating	1 - 2 - 1	3M	3M
Pima	43	1	Undulating	1 - 2 - 1	3M	3M
Kiowa	46	1	Undulating	5 - 4 - 5	2M	2M
Sioux	48	3	Undulating	3 - 2 - 3	2M	2M
Flathead	49	1	Undulating	3 - 4 - 3	2M	2M

Table 9a

Non-Final Cadences in Vocal Renditions

Tribe	Song No.	Phrase No.	Direction	Tones Used	Last Two Intervals	
Winnebago	1	1	Descending	6 - 4	2M	3m
Winnebago	1	4	Descending	5 - 4	2m	2M
Winnebago	11	1	Descending	4 - 3	4th	2M
Chippewa	29	1	Undulating	6 - 7	3m	3m
Chippewa	29	2	Undulating	2 - 3	3m	3m
Pima	34	1	Undulating	4 - 2	3M	4th
Pima	34	2	Undulating	4 - 3	3m	3m
Pima	38	1	Undulating	2 - 3	2M	2M
Pima	44	3	Undulating	1 - 2	3m	3m
Kiowa	47	1	Undulating	4 - 5	2M	2M

Bibliography

Beckwith, M. W. 1938 — Mandan and Hidatsa Myths and Ceremonies. (Memoirs of the American Folk-Lore Society) vol. 32, Philadelphia.

Christensen, D. 1960 — "Inner Tempo and Melodic Tempo," Ethnomusicology, 4:9-13.

Coolidge, M. R. 1929 — The Rain Makers--Indians of Arizona and New Mexico. Boston, New York: Houghton Mifflin Co.

Cushing, F. H. 1923 — "Origin Myth From Oraibi," The Journal of American Folk-Lore, 36:163-170.

Deloria, E. C. 1961 — "The Origin of the Courting Flute," Museum News, W. H. Over Museum, State University of South Dakota Vermillion: South Dakota 22(6):5-7.

Densmore, F. 1910 — Chippewa Music. Bureau of American Ethnology, Bulletin 45, Washington.

1913 — Chippewa Music. Bureau of American Ethnology, Bulletin 53, Washington.

1922 — Northern Ute Music. Bureau of American Ethnology, Bulletin 75, Washington.

1923 — Mandan and Hidatsa Music. Bureau of American Ethnology, Bulletin 80, Washington.

1926 — The American Indians and Their Music. New York: The Woman's Press.

1927 — Handbook of the Collection of Musical Instruments in the U.S. National Museum. Washington: Smithonian Institution, U.S. National Museum, Bulletin 136.

1929a — Papago Music. Bureau of American Ethnology, Bulletin 90, Washington.

1929b — Chippewa Customs. Bureau of American Ethnology, Bulletin 86, Washington.

1936 — Cheyenne and Arapaho Music. (Southwest Museum Papers No. 10). Los Angeles: Southwest Museum.

Fewkes, W. F. 1894 — "The Walpi Flute Observance--A Study of Primitive Dramatization," Journal of American Folk-Lore, 7:265-87.

1895 "The Oraibi Flute Altar," Journal of American Folk-Lore, 8:265-84.

1896 "The Miconinovi Flute Altars," Journal of American Folk-Lore, 9:241-255.

Goddard, P. E. 1918 "Myths and Tales From the San Carlos Apache," Athropological Papers of the American Museum of Natural History, 24:1-86.

Grinnell, G. B. 1923 The Cheyenne Indians--Their History and Ways of Life. New Haven: Yale University Press.

1919 "Myths and Tales From the White Mountain Apache," Anthropological Papers of the American Museum of Natural History, 24:89-139.

Hammond, G. and Rey, A. 1940 Narratives of the Coronado Expedition 1540-42. (Coronado Historical Series vol. 1) Albuquerque: University of New Mexico Press.

Hassrick, R. B. 1964 The Sioux--Life and Customs of a Warrior Society. Norman: University of Oklahoma Press.

Herndon, M. 1974 "Analysis: The Herding of Sacred Cows," Ethnomusicology, 18:219-62.

Herzog, G. 1928 "The Yuman Musical Style," Journal of American Folk-Lore, 41:183-231.

1936 "A Comparison of Pueblo and Pima Musical Styles," Journal of American Folk-Lore, 49:283-417.

Kidder, A. V. and Guernsey, S. J. 1919 Archeological Explorations in Northeastern Arizona. Bureau of American Ethnology, Bulletin 65, Washington.

Kolinski, M. 1957 "The Determinants of Tonal Construction in Tribal Music," The Musical Quarterly, 43:50-56.

1959 "The Evaluation of Tempo," Ethnomusicology, 3:45-57.

1960 "Notes on Inner Tempo and Melodic Tempo," Ethnomusicology, 4:14-15.

Lowie, R. H. 1924 "Notes on Shoshonean Ethnography," Anthropological Papers of the American Museum of Natural History, 20:185-315.

1935 The Crow Indians. New York: Farrar and Rinehart Inc. on Murray Hill.

Merriam, A. P. 1951 "Flathead Indian Instruments and Their Music," The Musical Quarterly, 37:368-75.

Morris, F. 1913 The Metropolitan Museum of Art, Catalogue of Musical Instruments, vol. 2, Oceania and America, New York.

Murdock, G. P. and O'Leary, T. J. 1975 Ethnographic Bibliography of North America. New Haven: Human Relations Area Files Press (4th ed.).

Nettl, B. 1953 "The Shawnee Musical Style: Historical Perspective in Primitive Music," Southwestern Journal of Anthropology, 9:277-85.

1974 "Thoughts on Improvisation: A Comparative Approach," The Musical Quarterly, 60:1-19.

Opler, M. E. 1940 Myths and Legends of the Lipan Apache Indians. (Memoirs of the American Folk-Lore Society) vol. 36.

1941 An Apache Life-Way--The Economic, Social and Religious Institutions of the Chiricahua Indians. Chicago: Chicago University Press.

Parsons, E. C. 1925 The Pueblo at Jemez. Andover: Phillips Academy.

1929 "Ritual Parallels in Pueblo and Plains Cultures, With Special Reference to Pawnee," American Anthropologist, 31:642-54.

1938 "The Humpbacked Flute Player of the Southwest," American Anthropologist (New Series), 40:337-8.

1939 Pueblo Indian Religion. Chicago: University of Chicago Press.

Radin, P. 1915-16 "The Winnebago Tribe," 37th Annual Report of the Bureau of American Ethnology, pp. 33-551.

Roberts, H. 1936 Musical Areas in Aboriginal North America. New Haven: Yale University Press.

Russell, F. 1904-05 "The Pima Indians," 26th Annual Report of the Bureau of American Ethnology, pp. 3-385.

Sachs, C. 1940 — The History of Musical Instruments. New York: W. W. Norton & Co., Inc.

Shimkin, D. 1947 — "Childhood and Development Among the Wind River Shoshone," Anthropological Records. University of California Publications. Berkeley & Los Angeles: University of California Press, 5:289-324.

Skinner, A. 1915 — The Menomini Indians. Anthropological Papers of the American Museum of Natural History, New York, vol. 13.

Stephen, A. M. 1929 — "Hopi Tales," Journal of American Folk-Lore, 42:1-72.

1930 — "Navaho Origin Legend," Journal of American Folk-Lore, 43:88-104.

1936 — "Hopi Journal," Columbia University Contribution to Anthropology, 23:5-6.

Swanton, J. R. 1924-25 — "Religious Beliefs and Medical Practices of the Creek Indians," 42nd Annual Report of the Bureau of American Ethnology, pp. 473-672.

Voegelin, E. W. 1942 — "Shawnee Musical Instruments," American Anthropologist (New Series) 44:463-75.

Discography and Tapes

Records

1. Music of the American Indian
   Library of Congress, Division of Music AAFS L34-43, 1954
   Recorded and edited by W. Rhodes

2. Songs and Dances of Great Lakes Indians
   Folkways Records P1003, 1956
   Recorded by G. P. Kurath

3. War Whoops and Medicine Songs
   Folkways Records FE 4381, 1964
   C. Hofmann ed.

4. American Indian Music of the Sioux and Navaho
   Folkways Records 4401, 1949

5. Songs and Dances of the Flathead Indians
   Folkways Records P445, 1953
   Recorded by A. P. Merriam and B. W. Merriam

Tapes

Indiana University: Archives of Traditional Music

1. Apache - Goddard ATL 1903.1

2. Pima - McCullough ATL 1011, 1010.4 plus 1012

3. Winnebago - Herzog ATL 410.10, 410.11, 414.19, 414.20, 414.22, 414.25, 419.1, 419.2, 419.15, 419.16, 420.6, 420.7.

4. Fox - Randle ATL 766.13, 766.23, 772.19 - 772.22

5. Yuchi - Speck ATL 1946.2