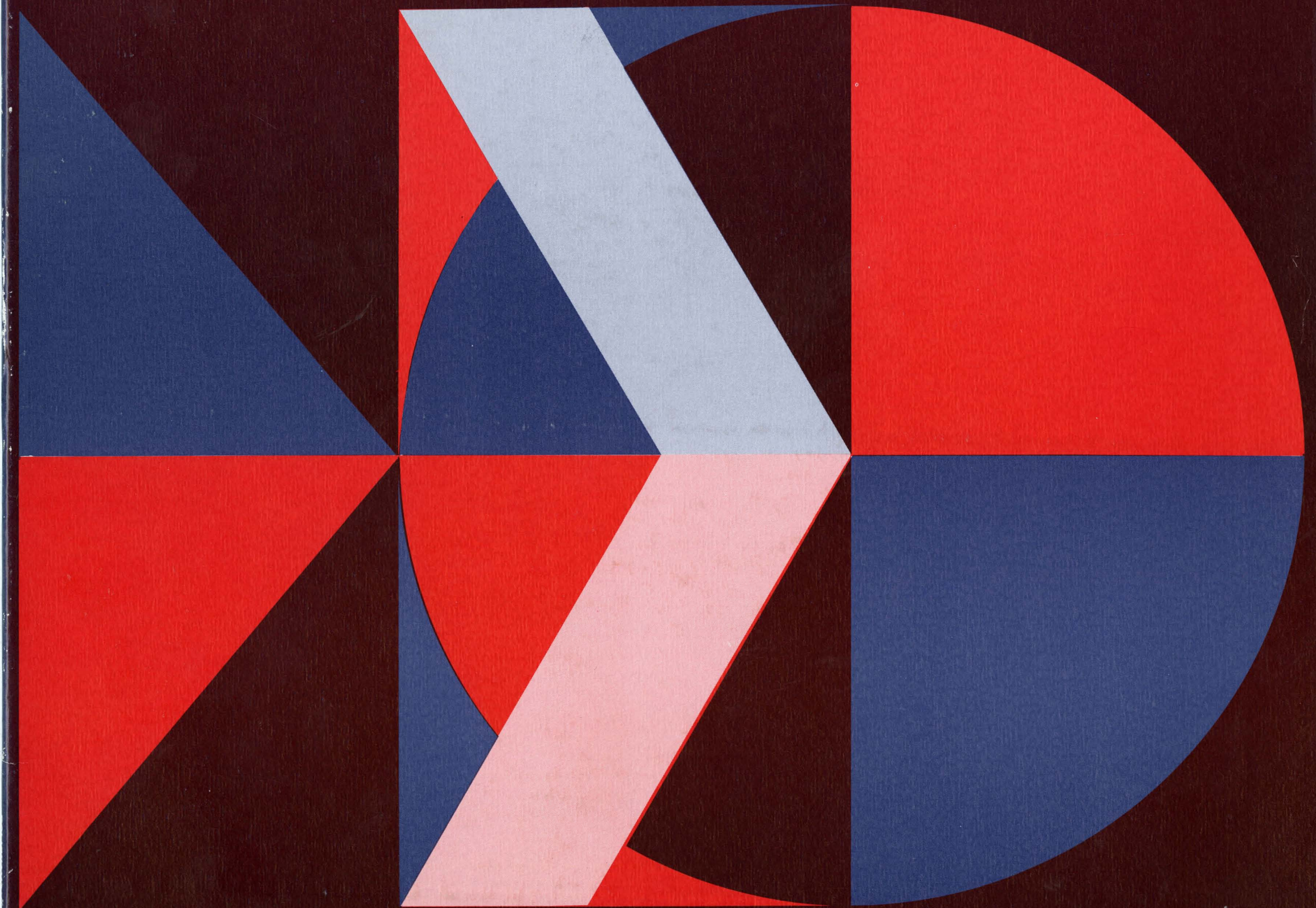


SOUND PATTERNS

Human Sounds / Musical Sounds / Natural Sounds / Location Sounds

SCIENCE SERIES

FOLKWAYS RECORDS FX 6130



SOUND PATTERNS

DESCRIPTIVE NOTES ARE INSIDE POCKET

COVER DESIGN BY RONALD CLYNE

FOLKWAYS RECORDS FX 6130

NATURAL SOUNDS

Band 1. Wood Thrush — natural speed
Band 2. Wood Thrush — slowed down to 1/2 speed
Band 3. Wood Thrush — slowed down to 1/4 speed
Band 4. Crickets (airplane motor in background) — natural speed
Band 5. Crickets — slowed down to 1/2 speed
Band 6. Crickets — slowed down to 1/4 speed
Band 7. Crickets — slowed down to 1/8 speed
Band 8. Thunder Storm (with food and bird)
Band 9. Alligator Chorus (American and one Asiatic)
Band 10. Two Lions (Atlantic, Ga. Zoo)
Band 11. Monkey (happy)
Band 12. Monkey (same monkey - angry)
Band 13. Tortoise Mating Call

MUSICAL SOUNDS

Band 14. Musicians Tuning-Up
HUMAN SOUNDS
Band 15. Animal Imitations by an Eskimo
Band 16. Heartbeats

LOCATION SOUNDS

Band 1. CHORCHA, HONDURAS
Band 2. Talking Drums, African
Band 3. Taxi Trip, Through Traffic to Airport
Band 4. Street Cries — N. Y. C. Lineman
Band 5. Street Cries — N. Y. C. Gardener!
Band 6. Street Cries — Hot Dogs in Times Square
Band 7. Street Cries — Charleston, S. C. Flower Vendor
Band 8. Cow Ceremony in Yugoslavia
Band 9. Cow Chorus — East Africa

MAN MADE SOUNDS

Band 10. Jet Flight
Band 11. Railroad to Atlantic City
Band 12. Short Wave Radio
Band 13. Pump Drill
Band 14. Electronic Feedback — 7 1/4 inches tape
Band 15. Electronic Feedback — 1 1/2 inches tape

Library of Congress Catalogue Card No. R 59-163

© 1953 FOLKWAYS RECORDS & SERVICE CORP.
632 Broadway, NYC, USA 10012

SOUND PATTERNS

SIDE I

NATURAL SOUNDS

- Band 1. Wood Thrush -- natural speed.
- Band 2. Wood Thrush -- slowed down to 1/2 speed.
- Band 3. Wood Thrush -- slowed down to 1/4 speed.
- Band 4. Crickets (airplane motor in background) -- natural speed
- Band 5. Crickets -- slowed down to 1/2 speed.
- Band 6. Crickets -- slowed down to 1/4 speed.
- Band 7. Crickets -- slowed down to 1/8 speed.
- Band 8. Thunder Storm (with toad and bird).
- Band 9. Alligator Chorus (American, and one Asiatic)
- Band 10. Two Lions (Atlanta, Ga. Zoo)
- Band 11. Monkey (happy)
- Band 12. Monkey (same monkey - angry)
- Band 13. Tortoise Mating Call

MUSICAL SOUNDS

- Band 14. Musicians Tuning-up.

HUMAN SOUNDS

- Band 15. Animal Imitations by an Eskimo
- Band 16. Heartbeats.

SIDE II

LOCATION SOUNDS

- Band 1. Chorchas, Honduras.
- Band 2. Talking Drums, Africa.
- Band 3. Taxi Trip, Through Traffic to Airport
- Band 4. Street Cries -- N. Y. C. Lineman
- Band 5. Street Cries -- N. Y. C. gardenias!
- Band 6. Street Cries -- Hot Dogs in Times Square.
- Band 7. Street Cries -- Flower Vendor, Charleston, S. C.
- Band 8. Cow Ceremony in Yugoslavia.
- Band 9. Dawn Chorus, East Africa.

MAN MADE SOUNDS

- Band 10. Jet Flight.
- Band 11. Railroad to Atlantic City.

- Band 12. Short Wave Radio.

- Band 13. Pump Drill.

- Band 14. Electronic Feedback -- 7 1/2 inches tape.

- Band 15. Electronic Feedback -- 15 inches tape.

FOLKWAYS RECORDS in this series presents what it believes to be a departure from material generally issued on phonograph records. Like the photography and art 'annuals,' each issue will include the most unusual -- and the most common -- sounds that exist; and through aural interplay, FOLKWAYS hopes to be able to establish a mood not unlike that of seeing photographs and pictures. Taken out of context these sounds 'stand' by themselves in their uniqueness, and create new auditory dimensions.

These sounds came to FOLKWAYS RECORDS from varied sources and were sent by many people..... many were recorded on scientific expeditions. Their compilation according to their character tends to make exotic and exciting listening.

Many recording techniques were used. Motion picture sound recordings were taken "on location." Peter Paul Kellogg had recording equipment mounted in the rear compartment of his passenger car and the parabolic reflector that he used was fastened to a spare tire rig. Robert Snedigar used a small, inexpensive tape home-operated-house current recorder with which he had his "Zoo show" copied 'off the air' in Chicago. Some of the sounds were recorded on primitive disc-records in the wilds of the Arctic and in Africa, others were "taped" (30 inches) with the latest Ampex, Telefunken or RCA studio microphones; many were recorded with the new "high-fidelity" Magnemite hand-operated battery recorder that weighs less than twenty pounds complete and which explorers frequently take now to inaccessible areas.

Peter Bartok taped the crickets in this album thus: He had a recording session in a barn in Connecticut with a string quartet; this was the only place where they felt they could get a quality of reproduction that would "sound real." That night he heard the cricket chorus (with toads in the background). He set up his Ampex, rolled out a 30-foot cable with his microphone and got to work.

Dr. Peter Paul Kellogg was "on location" in Florida recording animal sounds. Just as he was "getting" the toad heard in this record, a storm broke. He rushed to his car with the microphone to protect it. Then he proceeded to record the storm. After it was over, he "opened up" his equipment and caught the bird (aurally). It seemed a nice sequence to include.

SIDE I

NATURAL SOUNDS

- Band 1. Wood Thrush -- natural speed.
- Band 2. Wood Thrush -- slowed down to 1/2 speed.
- Band 3. Wood Thrush -- slowed down to 1/4 speed.

(Recordings, from Peter Paul Kellogg, Cornell University).

Notes by Charles Edward Smith

In musical style and phrasing the thrush's song is probably as beautiful an example of the antiphon as may be found in nature, or, for that matter, in music, whatever its origin. Countless ages went into the perfection of its melody -- a perfection by human standards that may be merely an accidental byproduct of its purpose in the world of thrushes -- for the evolution of the song was as unhurried a process as that of the individual species.

The antiphon in music is considered one of its earliest forms, statement and response differing in tonal nuance. It is found in present-day folk music in what is probably much the same structural form, though not necessarily the same idiom, as that in the Song of Miriam, the verses of which are chronicled in the first book of the Bible.

Many birds, animals and possibly insects as well, employ some form of statement and response in their "calls" and it is a reasonable surmise that before the advent of language or music, our ancestors, too, used such calls. From this it would be tempting to hypothesize that man, in his first musical inventions, imitated nature, but this would be a tenuous hypothesis. Present-day anthropologists -- not without exception of course -- lean to the belief that the discovery of tools, accidental or however it came about, coincided with the dawn of consciousness and that the technology without which conscious art cannot exist must have related in turn to the technological level of society.

A final word about the thrush's song might be in order. This is, so far as ornithologists know, an instinctual song, of a responsive nature. Play back the call of the thrush to one that had never heard it and it would instinctively respond in kind. It would not respond to the "call" of another species.

Band 4. Crickets (airplane motor in background) -- natural speed.

Band 5. Crickets -- slowed down to 1/2 speed.

Band 6. Crickets -- slowed down to 1/4 speed.

Band 7. Crickets -- slowed down to 1/8 speed.

Recorded by Peter Bartok, in North Stonington, Connecticut, at approximately 10:30 p.m. in August, 1951. Modified Altec microphone. Ampex: 30" Speed.

(Recordings, from Peter Bartok).

Observations by entomologists, poets and folklorists.
Compiled by Charles Edward Smith.

The Wonderful World of Insects - Gaul, Albro T.
(Rinehart, 1953).

p. 48: "It is thought that the chirping of crickets may be a mating call since only the male crickets chirp. Among the birds, what we used to consider mating calls have actually been shown to be claims of nesting

territory and warnings to other birds not to come too close." (This latter point is discussed in detail by Konrad Z. Lorenz in his book "King Solomon's Ring," one of the best-written and most accurate books by a Naturalist of recent times. CES) Gaul continues: "It is quite possible that the cricket chirps are similar claims to staked-out territory under the fief of the chirper." (fief - a landed estate held under feudal tenure, - Funk & Wagnalls)

p. 66-67 "We know that hearing differs greatly among various animals. We know that high-frequency sounds which are inaudible to us can be used as dog whistles, and that dogs often howl at music because the overtones beyond our tone range actually hurt their ears. Among insects, the sensitivity and range of sound reception is highly variable. Some caterpillars are known to be sensitive to sounds, or at least to ground vibrations, which range from 32 vps (vibrations per second) to 1000 vps. This ranges from C in the third octave below middle C to C in the octave above high C. Normal human hearing ranges a whole octave lower and rises to a frequency of about 17,000 vps, way above the musical scales and into the realm of overtones and harmonies.

"The cricket is able to detect sound waves from 50 vps to about 3000 vps. It is known that the female cricket can hear the chirps of the male over a distance of at least thirty feet. These vibrations are received in the cerci, the paired tails at the tip of the cricket's abdomen. It is thought that these cerci pick up ground vibrations, sounds, and may act to detect wind velocity; a sort of insect anemometer."

p. 68: "The only supersonic insect that is commonly known is the katydid. This creature can hear sounds way above our top sound frequency limit. It has been shown that the katydids can hear sounds up to 45,000 vps. It is known, however, that a number of insects can produce supersonic sounds."

p. 152: (Many) "common insect sounds are made by a rasping mechanism somewhat like playing on a washboard, or rubbing a picket fence with a stick. Some part of the insect is provided with microscopic corrugations which represent the picket fence; while adjacent parts are formed into a series of notches or teeth which scrape across the 'pickets.' This is done sharply and quickly enough to produce a sound which we may recognize, and to which other insects may react. The chirp of the crickets and the katydid's call are made in this way."

"The rate at which these calls are made is proportional to the body activity of the insect, which in turn is controlled by the temperature. It is therefore possible to determine the temperature by counting the calls. With the tree cricket the temperature is equal to 40 plus the number of chirps in one quarter of a minute."

Order: Orthoptera. Both tree and field crickets are Family Gryllidae. Common Field Cricket is of the above groups, plus Genus Acheta assimilis.

Snow Tree Cricket, Genus: Oecanthus niveus... New England to Minnesota and Utah to Georgia and Texas. Although the male is an excellent "singer," in this species the female has no auditory organs with which to hear him. She is attracted to him chemically.... (there being a gland on the top of his third thoracic segment whose exudate she tastes while copulating) - The Insect Guide, - Swain, Ralph B. (Doubleday).

In field crickets the antennae are long and thread-like. Often longer than the body. They are nocturnal and, says The Insect Guide, among the best known of insect singers, the males making music by vibrating the fore wings together. They are partly carnivorous and have been tactfully described as "somewhat cannibalistic."

About Crickets

Fol. summarized from Stuart Ward Frost's "Ancient Artizans" (The Van Press, Boston, 1936): Of all the remarks about the cricket's "singing" perhaps Hawthorne's is most perceptive of insect sounds in the country. . . . Frost quotes Hawthorne's description: "Audible stillness."

"In considering the music of insects, we must remember that these vibrations variously called, songs, noises, sounds speech, expression, stridulation, phonation or sonification, are not performed for our benefit but usually by the male for the benefit of the female. It is also probable that many of their exceedingly high or low vibrations may not even be audible to man." (I have not come across the hypothesis, though it must have been put forward, that insects probably sense vibrations -- as deaf people sometimes do, regardless of the capacity of the hearing organ. Deaf people are aware of factory whistles at considerable distances, possibly by vibrations set up in their neighborhood or just possibly by vibrations (resonance factors) in themselves, i.e., their bodies. . . CES)

In many countries of the world crickets were kept in cages, like birds, as well as other insects. . . . a week of celebration in Japan called "The Festival of the Singing Insects" was the occasion to release all caged insects to permit them a few weeks of freedom before frost.

Shakespeare's Queen Mab (Romeo & Juliet), the fairest midwife, no bigger than an agate stone, used a nutshell for coach and had "her whip of cricket's bone."

Milton (Il Penseroso):

"Far from all resort of mirth
Save the cricket on the hearth."

"Nature conceived thee in her merriest mood. . .
and at thy birth the cricket chirped."

"The cricket forecasts rain, death or the approach
of the absent lover."

In Lancashire (Eng.) crickets leave ghosts if killed which eat holes in worsted stockings. (in revenge for breach of hospitality).

In an East Indian legend the soul has the capacity to leave the sleeping body, making its exit by way of the nose, in the guise of a cricket. Some Cherokee Indians said to have drunk tea made of crickets, in order to become good "singers."

From Smith, the back room boys' Naturalist:

It is a moot point, though one of no immediate concern to Mr. Petrillo, if crickets should be regarded as

singers or instrumentalists. With their built-in washboards and scrapers, they might be classified with country fiddlers, who also saw and scrape. . . .

The female if she has the yen,
Can listen with her abdomen.

Band 8. Thunder Storm (with toad and bird)

(Recording, from Peter Paul Kellogg, Cornell University)

Band 9. Alligator Chorus (American, and one Asiatic).

(Recording, from Robert Snedigar)

Recorded with Revere Tape Recorder -- 3-3/4 inches by Robert Snedigar, Curator of Reptiles Brookfield Zoo, Chicago, in 1952. In the Pit in the Reptile House at Brookfield Zoo there are many alligators from the Americas and one from Asia. Mr. Snedigar says that one can recognize the Asiatic alligator (who starts to bellow (?) in the middle of the recording) by the deep resonance of his (?) voice.

Band 10. Two Lions (Atlanta, Ga. Zoo).

(Recording, from Moses Asch)

The Two Lions were recorded by Moses Asch in November, 1952 at the Atlanta, Georgia Zoo. The Two Lions were in separate cages and seemed to be conversing in this fashion. They were taped at 7-1/2, Brush Crystal Microphone, Magnamite Portable Recorder. The Two Lions were about 100 yards from the microphone.

Band 11. Money (happy)

Band 12. Monkey (same monkey - angry)

The Monkey (happy and angry) came to FOLKWAYS with an audition tape of Sansa Music from French Equatorial Africa. We did not use the Sansa Music here -- you can hear it in three FOLKWAYS (ETHNIC) albums. . . . but, here is the monkey.

Band 13. Tortoise Mating Call.

(Recording, from Robert Snedigar)

This was recorded by Robert Snedigar at the Brookfield Zoo in Chicago in 1952, at 3-3/4 speed, with Revere Tape Recorder. The scratching noise heard after "the call" is the male tortoise scraping the female tortoise's back.

MUSICAL SOUNDS

Band 14. Musicians Tuning-up.

(Recording, from Peter Bartok)

Musicians Tuning-up made by Peter Bartok in Kingsway Hall, London, August 1950, employing three RCA ribbon microphones and an Altec. Tuning is to note "A" -- in a violin concerto by Mozart. 15" Ampex.

HUMAN SOUNDS

Band 15. Animal Imitations by an Eskimo.

(Recording, from Laura Boulton)

Recorded in 1942 by Laura Boulton at Southampton Northwest Territories, with Presto Disc Recorder.

Band 16 Heartbeats.

(Recording, from Peter Bartok)

Heart of a secretary. Made by Peter Bartok in 1952, using modified Altec microphone, 15" Ampex. Subject was 23-year-old female.

SIDE II

LOCATION SOUNDS

Band 1. Chorchas, Honduras.

(Recording, from Willard Pictures)

The Morning The Chorchas Whistled

Dawn, in Honduras, Central America, leaps out at you with a rush. And, during the process of night turning into day, most of our Honduran feathered friends wake, tentatively try out their voices and then, in ever mounting volume build up to the squalling, shrieking cacaphony of sound that is bird life in the tropics.

One member of the fraternity however, wakes with an alarm clock-like instinct a few moments before the sun bounds up over the mountains. He clears his throat, arches his back and sings about six measures of a tune. He repeats this anywhere from once to perhaps a half a dozen times, then closes his mouth and refuses to utter another peep until the next day, same time, same place. This bird is called a Chorchas.

On a particular morning a year or so ago a recording engineer named Peter K. Smith awakened an hour before dawn with an alarm clock but with no instinct or enthusiasm whatsoever. He was in a large Hacienda in Honduras and on the porch running around the end of the main building, in a well-appointed dacha, was a Chorchas named Don Julio. Don Julio was asleep, but not for long. Dawn was on the way....

Mr. Smith tip-toed sleepily around the room setting up a Magnacorder tape recording unit. He connected the A.C. lines to a portable 110 Volt battery operated generator and stealthily hung a Western Electric microphone near the Chorchas's cage. Don Julio slept peacefully on. Mr. Smith threaded a roll of tape on the machine, turned on the amplifier and listened. Through the earphones came the mournful hoot of an owl, a cricket's intermittent chirp. Don Julio slept.

Mr. Smith looked at his watch, peered out to the east for tell-tale signs and checked the newspaper for official sunrise time. Zero hour was approaching. He turned on the recorder and as the tape slithered through the guide wheels he waited, hand on the volume control. The silence was stifling. Suddenly a rooster crowed and a calf bawled good morning in answer. Don Julio slept. Other members of the household appeared, to stand silently by the recorder. The tape ran at fifteen inches per second from one reel to the other. Mr. Smith remarked in a whisper that perhaps Don Julio was operating on Eastern Standard time. The cook entered and asked, "Que quiere usted por desayuno?", the tape flipped its end across the recording heads and Mr. Smith shut off the machine and stood up. Everyone began to talk at once and ex-

plain about the Chorchas and how temperamental he was. Then, suddenly, like St. Peter blowing the final blast, the Hacienda shook with the clear, penetrating notes of a strange little melody. No one spoke as the ear splitting tones soared through the house. Don Julio was awake!

The song ended in shattering silence. Mr. Smith quickly threaded another roll of tape and was informed that Don Julio sometimes sang more than once if someone whistled at him. All hands took turns whistling at Don Julio. Don Julio just looked blank. Breakfast was served and eaten, the sun rose higher in the sky, recording tape wound and unwound. Mr. Smith sat hunched under the earphones and every so often whistled in the general direction of the porch. Don Julio listened and was not amused. Then, from the depths of musical memory, Mr. Smith recalled a number titled "The Hot Canary." He adjusted the volume, turned on the machine and whistled a few measures. Silence for a moment and then again that piercing, slightly off-key melody. The VU meter needle rose, trembled and relaxed, then rose again and yet again. Don Julio was real cool and real gone!

Shortly thereafter Mr. Smith carefully packed up the precious roll of tape and disassembled the recording machine. He said goodbye to Don Julio and all the nice people in the Hacienda and took a plane back to the United States.

Mr. Smith is not very fond of Chorchas.

This story was written by Peter K. Smith who was the recording engineer for the film "HONDURAS" made for the United Fruit Company by Willard Pictures Inc. Tom Willard, photography, Doris Stone sup.

Band 2. Talking Drums. Africa.

Talking Drums (with natural sounds) was recorded by the Rev. Dr. Leo A. Verwilghen, missionary from Belgium, in 1951 on one of the first Magnacorders to take a trip to Africa. The scene recorded takes place in a village in the interior of the Belgian Congo. In the words of Dr. Verwilghen in a letter to FOLKWAYS: "NATIVE JUSTICE. On two rows; one side the opponents, the other side the defenders. All round is gathered the whole village. Each on his turn gets in the midst and speaks his arguments which is approved in a few words through the whole crowd. And then immediately the man starts singing a native saying which is in accordance with his speech, while the whole crowd accompanies him and the drums are beaten. Here are in short the meaning of the arguments and the songs; Argument: I was in my house and would have liked to stay, but he has come and wants to put the thing in public. So I have got out and that is why you see me here. Song: He compares himself with a (grillon) I would like to sing, but the wall of the earth that surrounds me prevents me to do it. One has forced me to get out of my hole, so I will sing. Argument: Let us debate the things but slowly, slowly otherwise we shall have to go before the tribunal of the white people. You have forced me to come; when the sun will be set we shall still be here debating. Song: I am like a dog that stays before the door till he gets a bone. Argument of the opponent: Nobody goes both ways at the same time. You have told this and that. One of the two must be wrong, that is why I am attacking you. Song: A thief speaks with another thief. It is because you are bad that I attack you."

Band 3. Taxi Trip, Through Traffic to Airport.

Recorded in 1952 in Boston in a cab picked up at dusk on Boylston Street near Charles. From Boylston to Washington Street through the theatre district, where bird peeps are heard in heavy traffic sounds.

As the traffic cop stops the cars on a red light, people can be heard talking as they walk by; then the motor of a nearby car and a car's horn. Down Washington Street to Adams Square and through the Sumner Tunnel (the rumble of the tunnel sounds) then to the straightway and from there a short smooth trip to Logan International Airport.

Band 4. Street Cries -- N. Y. C. Lineman

Band 5. Street Cries -- N. Y. C. gardenias!

Band 6. Street Cries -- Hot Dogs in Times Square

Band 7. Street Cries -- Flower Vendor,
Charleston, S. C.

Lineman

by Frederic Ramsey, Jr.

Recording of call of pole lineman, taken in East 68th Street court yard, 1949. In New York City, the "lineman" is the man who goes around and installs, mends, and maintains the backyard clotheslines that are a familiar sight from the rear apartment windows of any tenement district. Strung from poles to rear windows, the lines hold all the week's wash at fourth and fifth floor window levels, and are hauled into each tenement by a set of pulleys.

Fritzie the Lineman pays a regular morning call in his district, accompanied by a partner who echoes his cry. When the cry is heard in the court below, windows go up, heads pop out, and the day's problems are ironed out. If there is a fouled line, he climbs up the pole and straightens it out. His cry, sounding almost like "Bunero!", actually is a shortening of the longer phrase, "Line your rope!" His partner responds with a low-pitched, guttural, "ayyyyyiiyy" which is hard to render phonetically, and equally hard to imagine as an everyday outdoor sound from the everyday backyards of New York; it sounds more flamenco than familiar.

Recorded from fourth floor level -- Lineman up on pole, and lineman and partner on ground. Taken at 7-1/2 ip.s. with Shure 556 dynamic microphone, subject 20 to 30 feet distant. Brush Sound-mirror. Transposed to acetate, and from acetate to final tape.

N. Y. C. gardenias! and Hot Dogs in Times Square.

The Gardenia Caller and Hot Dog cries were recorded between 46th and 47th streets on Broadway (Times Square), N. Y., on a Magnamite by Moses Asch in 1951. It is of interest to note the juke-box recording of "Cry" by Johnnie Ray in background.

Flower Vendor, Charleston, S. C.

This is from a recording issued by the National Council of Teachers of English made by Walter C. Garwick, with the cooperation of the Society For The Preservation of the Spirituals of Charleston -- Record number 13. "The Street Cries of Charleston, S. C. -- the fish, flower and vegetable vendors as

they go about the streets call out their wares in Quaint (sic) original chants" (from the label copy)

Band 8. Cow Ceremony in Yugoslavia.

Recorded in Yugoslavia in 1951 by Laura Boulton on a Magnacorder. 15 inches tape.

Band 9. Dawn Chorus, East Africa.

Recorded by the Queeny Expedition for the American Museum of Natural History (N. Y.) in 1950, in Entebbe, Uganda near Lake Victoria, East Africa. The rooster "crowing" as elsewhere is also typical in Africa.

MAN MADE SOUNDS

Band 10. Jet Flight.

This was inspired by the British motion picture "Breaking Through the Sound Barrier."

Band 11. Railroad to Atlantic City.

At the start of the recording, made on a portable battery operated tape machine, the microphone (Brush crystal) was hung between the wheels of a Pennsylvania R.R. train on the Trenton, N. J. tracks where it remained as the train switched to the Atlantic City, N. J. tracks. Recording engineer was standing between the first two cars. Train whistles are heard as both trains (one on another track) round sharp curves. Then the conductor with his "tickets please." At the end, before the train pulled into Haddonfield Station, microphone was placed on the outside of the first car just behind the engine. The train comes to a halt, waits for passengers and with the ringing of the bell starts again. Recorded by M. Asch on Amplicorp Magnamite Recorder 610SD.

Band 12. Short Wave Radio.

Short Wave Signals

by Frederic Ramsey, Jr.

Taken at 15 i.p.s. with a Magnacorder, very low level recording to reflect the wide variation of dynamic range of incoming signals. Receiver: Hallicrafter SX-43, located near Raven Rock, New Jersey. Carrier waves, modulated and unmodulated. Scrambled telephone two-way communications signals. Code signals. Band: 6 to 12 Megacycles. AM reception. Slight fading, affecting db level of signals. A quick twist across the dial produced the "bloops" of carrier waves tuned quickly in and out.

Band 13. Pump Drill.

Pump Drill, drilling a well, from a commercial record.

Band 14. Electronic Feedback -- 7-1/2 inches tape.

Band 15. Electronic Feedback -- 15 inches tape.

Electronic Feedback recordings were made by David Hancock at Peter Bartok Studios.

"Made without speaker, by feeding output of tape recorder into input of same, which resulted in the same sound becoming re-recorded approximately every tenth of a second. This is the basic principal of the electronic echo chamber."

Handclapping, sentences, two metal washers and a metal basket with screw-driver were used.