A comb for removing lice and nits from animal and/or human hair is provided with two spaced apart rows of teeth, the teeth in each row being successively adjacent to and in close proximity to one another with tapered distal ends, respectively, the longitudinal centerlines of the teeth of one row being respectively aligned with the longitudinal centerlines of spaces between the teeth of the other row, and with the teeth of one row being longer than the teeth of the other row.
FIG. 2
FIG. 4
LICE AND NIT REMOVAL COMB

FIELD OF THE INVENTION

[0001] The present invention is related generally to products for personal grooming and hygiene, and more particularly to combs for removing lice and nits from the hair and scalp of an affected individual.

BACKGROUND OF THE INVENTION

[0002] Head lice (Pediculus humanus capitis) are small parasitic insects, which have evolved to live and thrive on the scalp and neck hairs of their human host. The external parasitic insects are often difficult to eradicate, especially in poverty stricken areas, and present a health problem to those afflicted. Head lice can also afflic people in developed areas such as in schools where people are in constant close contact. Those afflicted with head lice have to undergo some form of treatment or intervention for relief. One form of intervention uses insecticides or pesticides, which have been generally found to be effective and safe, if handled properly. The insecticide or pesticide is usually periodically applied to the hair and scalp of the afflicted individual to kill the head lice. Recently, it has been found that certain head lice strains have developed resistance against some of the more popular insecticides or pesticides currently available in the market.

[0003] In addition to insecticides or pesticides, mechanical means have also been employed in the treatment of head lice. Such mechanical means function by physically removing head lice and nits from the hair and scalp and can be effectively implemented alone or in combination with the insecticide or pesticide treatment. One mechanical means found to be effective is the lice and nit comb, which is a toothed instrument adapted for confining hair and sifting out the lice and nits. The typical lice and nit comb includes a plurality of spaced apart teeth arranged in a single row. The space between adjacent teeth is typically diminutive to permit the strands of hair to pass through as the comb is drawn, but prevent head lice and nits from passing through the space. In this manner, lice and nits present on the hair strands are effectively scraped off as the comb moves along the length of the hair.

[0004] Ideally, in order to ensure that the lice and nits are caught by the comb, the entire outer surface of the hair strands are scared and cleaned to prevent the lice and nits from avoiding the scraping action. However, the adjacent parallel teeth of the lice and nit comb forms open ended portions which are not able to scrape certain portions of the hair strands occupied therebetween. These limitations have made prior art lice and nit combs more time consuming and inconvenient to use, less effective in sifting and removing lice and nits from hair, and diminished in their ability to accommodate all hair types, thickness and volume.

[0005] Accordingly, there is a need for a lice and nit removal comb capable of captively and circumferentially grasping around strands of hair for enhanced scraping and cleaning action to entrap and remove lice and nits present as the device is drawn along the length of the grasped hair. In this manner, any lice and/or nit present in the hair is efficiently and effectively sifted and removed therefrom. There is a further need for a lice and nit removal device designed to accommodate various hair types, thickness, volume and curliness.

SUMMARY OF THE INVENTION

[0006] The present invention is directed to a lice and nit removal comb that includes a handle having an upper portion for gripping the comb, and a lower portion from which two rows of equally spaced teeth protrude therefrom. The two rows of teeth are spaced apart and in parallel with one another, whereby the centerlines of each of the teeth in one row are aligned directly with the centerlines of the spaces between the teeth of the opposing row. Each of the teeth are tapered at their distal ends. In the preferred embodiment, the front row of teeth are longer than the back row of teeth. In the front row of teeth, each of the teeth are of the same length, and are successively adjacent and in close proximity to one another. Similarly, the teeth in the back row are each of the same length, and are successively adjacent and in close proximity to one another. In use of the present comb, the front teeth are used to initially scoop up the hair, whereby as the comb is moved the scooped-up hair also goes to the back row or shorter teeth, thereby creating a tortuous or circuitous path for each hair to pass through, effectively causing the hairs to go around corners, whereby lice or nits are trapped within the teeth of the comb as the hairs are scraped against the teeth.

[0007] In one embodiment of the invention, the teeth consist of stainless steel, and the handle is made of an appropriate or suitable plastic material, such as ABS, or polypropylene, for example, or other suitable plastic material. In the embodiment where the handle is made of plastic material, the teeth are molded or embedded into the plastic material of the handle.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] Various embodiments of the invention are described in detail below with reference to the drawings, in which like items are identified by the same reference designation, wherein:

[0009] FIG. 1 is a pictorial view of the lice and nit removal comb looking toward the back and left side thereof at an angle, for one embodiment of the present invention;

[0010] FIG. 2 is a back elevational view of the comb of FIG. 1;

[0011] FIG. 3 is a right side elevational view of the comb of FIG. 1, the left side elevational view being a mirror image thereof;

[0012] FIG. 4 is a bottom plan view of the comb of FIG. 1; and

[0013] FIG. 5 is a cross-sectional view taken along the longitudinal axis of the comb of FIG. 2 viewed from the left side thereof.

DETAILED DESCRIPTION OF THE INVENTION

[0014] The present invention is directed to a comb 2 for removing lice and nits present in the hair and/or the scalp of a warm-blooded animal including humans. As shown in FIGS. 1 through 5, the comb 2 includes a plurality of short nodular projections or protuberances 4 in an upper portion of the back of the comb 8. The short nodular projections or protuberances 4 as positioned on the front and
back of the handle 8 provide a non-slip gripping surface for one to readily manipulate the comb during use.

The comb 2 also includes a protruding rectangular pad 16 on the lower front portion of the handle 8. A similar protruding rectangular pad 18 is provided on the lower back portion of the handle 8. Note also that the oval area 6 protrudes slightly away from the main portion of the front of the handle 8, as does the oval portion 10 on the back of the handle 8.

As clearly shown in FIGS. 1 through 5, the comb includes extending out and away from the bottom of body or handle 8 a plurality of front teeth 12 which are successively aligned to one another in close proximity, with all lying in the same plane. As shown, the distal ends of the teeth 12 are tapered. A back row of a plurality of teeth 14 also extend away from the bottom of the handle 8, are successively adjacent to and in close proximity to one another, and all lie in the same plane.

The front row of teeth 12 are spaced away from the back row of teeth 14. In the preferred embodiment of the invention, the handle consists of plastic material such as ABS, polypropylene, or other suitable plastic material. However, the handle 8 can be made of any other suitable material. Also, in the preferred embodiment, the teeth consist of stainless steel material, but alternatively can be made from any other suitable material. Accordingly, the present comb invention is not limited to a plastic handle 8, or stainless steel teeth 12 and 14.

In the preferred embodiment of the invention, thirty six of the longer teeth 12 are included, and thirty five of the shorter teeth 14 are included. The diameter of each tooth 12, 14 is about 0.046 inch except for the distal tapered end portions thereof, respectively. For the teeth 12 of the front row, and the teeth 14 of the back row, in the preferred embodiment the center-to-center distance between adjacent ones of these teeth is about 0.051 inch and the gap between adjacent teeth is about 0.005 inch. In the preferred embodiment, the spacing or gap between the respective centerlines of the successively adjacent teeth 12 of the front row, and between the successively adjacent teeth 14 of the back row is about 0.107 inch. The total width of the plurality of the teeth 12 in front of the comb is about 1.831 inches in the preferred embodiment. The exposed length of each one of the teeth 12 is about 1.47 inches, with the length of the shorter teeth 14 being one-quarter inch shorter. The length of the proximal ends of each one of the teeth 12 and 14 molded into or embedded within the handle 8 is about 0.452 inch. The maximum width of the handle 8 is about 0.373 inch, and the areas of width of nominal dimension are each about 0.27 inch. All of the aforementioned dimensions are for the preferred embodiment of the invention, and are not meant to be limiting.

The longitudinal axis of the plurality of front teeth 12 are offset from the plurality of back teeth 14. More specifically, the back row of teeth 14 are aligned to provide that the longitudinal central axis of each of the teeth 14 are aligned directly with the longitudinal centerlines of the gap or spaces between the teeth 12 of the front row of teeth. The offset between the front row of teeth 12 and the back row of teeth 14 can readily be seen in the bottom plan view of FIG. 7. By virtue of this offset alignment between the teeth 12 and the teeth 14, as the teeth of the comb 2 are passed through the hair of the user, with the front row of the teeth 12 being used to first contact and scoop up hairs therebetween, the hairs are forced to be bent into right angles around the teeth 12 and 14. Otherwise, the offset alignment creates a tortuous or circuitous path for each hair to pass through, literally making the hair go around corners, thereby trapping any lice or nits in the process of scraping the hairs along the offset teeth 12 and 14. This represents a major advantage relative to lice combs of the prior art.

Although various embodiments of the invention have been shown and described, they are not meant to be limiting. Those of skill in the art may recognize certain modifications to these embodiments, which modifications are meant to be covered by the spirit and scope of the appended claims. For example, the present lice comb has been described above as including two spaced apart rows of teeth 12 and 14, respectively, whereas an extension of the invention can include more than two spaced apart rows of teeth of unequal length to the extent practical. Also, although less preferred, the lengths of the teeth 12 and 14 can be of equal length, or even additional rows of teeth can be of equal length.

What is claimed is:

1. A comb for removing lice and nits from animal and/or human hair, comprising:
   a handle having a top, bottom, front face, and back face;
   a plurality of elongated first teeth each having a proximal end, and a distal end, the proximal ends of said first teeth being secured into an edge portion of the bottom of said handle proximate the said front face, said first teeth being successively adjacent and spaced apart in close proximity to one another in the same plane to form a row thereof;
   a plurality of elongated second teeth each having a proximal end, and a distal end, the proximal ends of said second teeth being secured into an edge portion of the bottom of said handle proximate said back face, said second teeth being successively adjacent and spaced apart in close proximity to one another in a common plane to form a row thereof;
   said row of first teeth being parallel to and spaced apart from said row of second teeth; and
   said first teeth being at least as long as said second teeth.
2. The comb of claim 1, wherein the distal ends of each one of said plurality of first and second teeth are tapered.
3. The comb of claim 1, wherein said plurality of first teeth consist of 36 teeth, and said plurality of second teeth consist of 35 teeth.
4. The comb of claim 1, wherein said plurality of first and second teeth each consist of stainless steel.
5. The comb of claim 1, wherein the rows of successive teeth of said plurality of first and second teeth, respectively, are displaced from one another, thereby providing that no one of said plurality of first teeth are in direct opposition to any one of said plurality of second teeth.
6. The comb of claim 1, wherein the longitudinal centerlines teeth of the rows of said plurality of first teeth are aligned directly with the longitudinal centerlines of the spaces between the teeth of the row of said plurality of second teeth.
7. The comb of claim 1, further including means for positioning the teeth of said plurality of first and second teeth to provide a tortuous or circuitous path for hairs to pass through, for enhancing the teeth scraping the hairs to remove lice and nits therefrom and trap them within said comb.
8. The comb of claim 7, wherein said positioning means includes aligning the longitudinal centerlines of the teeth of one of said rows of said plurality of first and second teeth with the longitudinal centerlines of the spaces between the teeth of the other of said rows.
9. The comb of claim 1, wherein said handle consists of plastic material.

10. The comb of claim 9, wherein said plastic material is selected from the group consisting of ABS, and polypropylene.

11. The comb of claim 1, wherein said handle further includes a plurality of nodular projections on portions of its said front and back faces.

12. The comb of claim 1, wherein said handle is configured to have curved edge portions about its said top, front, and back faces.

13. The comb of claim 1, wherein said plurality of first and second teeth have circular cross-sections along their lengths.

14. The comb of claim 1, wherein the length of said plurality of first teeth extending from said handle is about 1.47 inches, and the length of said plurality of second teeth extending from said handle is about 1.22 inches.

15. The comb of claim 1, wherein the gap or spaces between successive ones of said plurality of first teeth, and successive ones of said plurality of second teeth, is about 0.005 inch.

16. The comb of claim 1, wherein the spaces between the rows of said plurality of first and second teeth is about 0.107 inch.

17. The comb of claim 14, wherein the total exposed length of said plurality of first teeth is about 1.47 inches, and of said plurality of second teeth is about 1.22 inches.

18. The comb of claim 1, wherein said first teeth are longer than said second teeth.

19. A method for producing a comb for removing lice and nits from animal and/or human hair, comprising the steps of: securing a row of a plurality of first teeth to a bottom portion of a handle of said comb; securing a row of a plurality of second teeth to the bottom portion of said handle spaced apart from said row of a plurality of first teeth; making said plurality of first teeth at least as long as said plurality of second teeth; spacing apart in close proximity to one another the successive teeth in said row of first teeth; spacing apart in close proximity to one another the successive teeth in said row of second teeth; and aligning the longitudinal centerlines of the teeth of one of said rows of said plurality of first and second teeth with the longitudinal centerlines of the spaces formed between the teeth of the other of said rows.

20. The method of claim 18, further including the step of: tapering the distal ends of each one of the teeth of said pluralities of first and second teeth.